SOYAL

Operation Manual

Networking & Stand-alone Controller/

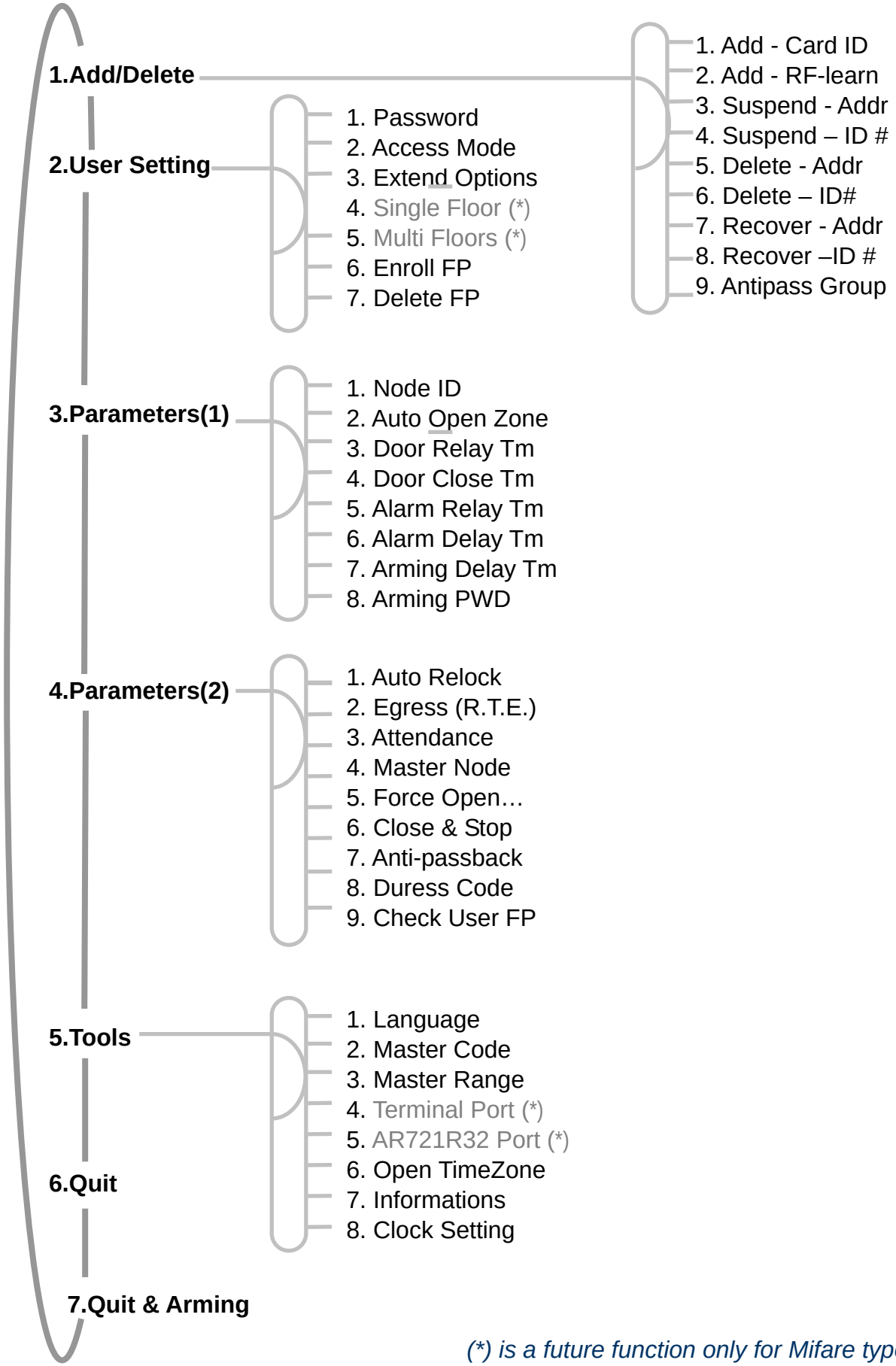
Networking Reader/

Fingerprint Identification Device

AR-821EF

2006/1/20

Function Menu



(*) is a future function only for Mifare type.

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1. Main Features

AR-821EF(i) is a smart single door controller. With a built-in reader and an external reader port, AR-821EF(i) could work for exit & anti-pass back function.

- Built-in Network Module. (Optional)
- Card capacity up to 10,000 Users.
- Fingerprint capacity up to 1,450.
- Keypad will be locked for 30 seconds, while continuous error operation.
- Dual function for Access Control and Time & Attendance.
- Alarm function available. (Tamper, Force entrance, door open too long)
- External reader port, 26/34 bit wiegand format for Anti-pass back.
- One RS-485 Port supported for networking.
- Master Cards range assignable.
- After flash Master Card and press # within 2 seconds can enter the “FUNCTION MENU”.
- Support with keypad locks immd & all cards entrance allowance before cards editing finished.
- Standby screen editable via 701 Server software. (701 Server \ 821E/829E Parameter Setting \ Idle Screen)

2. Notice

- Keep AR-821EF(i) away from the followings:

  Keep away from moisture or water

  Keep away from magnets or any magnetized items.

  Do not apply strong shock to AR-821EF(i)

- Each card has 10 digits code, including Site code (5 digits) and Card code (5 digits).

  Neither the Site Code nor the Card Code numbers can be 0.

- After card editing finished, Site Code and Card Code is not important anymore.

  System will require a USER ADDRESS instead.

- User can request to exit through the controlled door without using transponder (and without causing an alarm condition), by pressing an exit button. This will operate the door relay for the programmed door relay release time & stop alarm.

- **How to start / suspend (auto open zone) ?**

  Two ways – one is by software setting; the other is by the device keypad. Here is using device keypad setting.

  Step1: FUNCTION MENU

  Step2: tools (Function 5)

  Step3: setting Open Time Zone (Function 6)

  Step4: come back to main manual

  Step5: Parameters (1) (Function 3)

  Step6: start Auto open zone function (Function 2)

  Step7: Yes / No

  Note: The electronic lock would be locked until first one flash card on the reader when the system enter auto open time zone.

  And electronic lock will be locked that sensor feels door closed when system exit auto open time zone.

- **How to enroll fingerprint to two set of AR-821EF(i)?**

  Step1: Enroll fingerprint on the AR-821EF/EFi (Node 1)

  Step2: Upload fingerprint data to PC by 701 Server \ 821E/829E Parameter Setting \ Upload fingerprint data function

  Step3: Download fingerprint data to the AR-821EFi /EFi (Node 2) by 701 Server \ 821E/829E Parameter Setting \ Download fingerprint data function (Reference page 34)

- **How to disarming?**

  (1) User can be disarming by normal access mode once violating anti-pass-back resulting in alarm.

  (2) User can be disarming by valid card when alarm happen.

  (3) [*] + [1] [2] [3] [4] [5] [6] + [#]

  enter the “FUNCTION MENU”

  Step1: FUNCTION MENU

  Step2: Parameters (2) (Function 4)

  Step3: Close Door Stop Alarm (Function 6)

  Step4: Enter 1: YES.

- **How to know how many users in the system now? (Not including suspend card)**

  Step1: [*] + [1] [2] [3] [4] [5] [6] + [#]

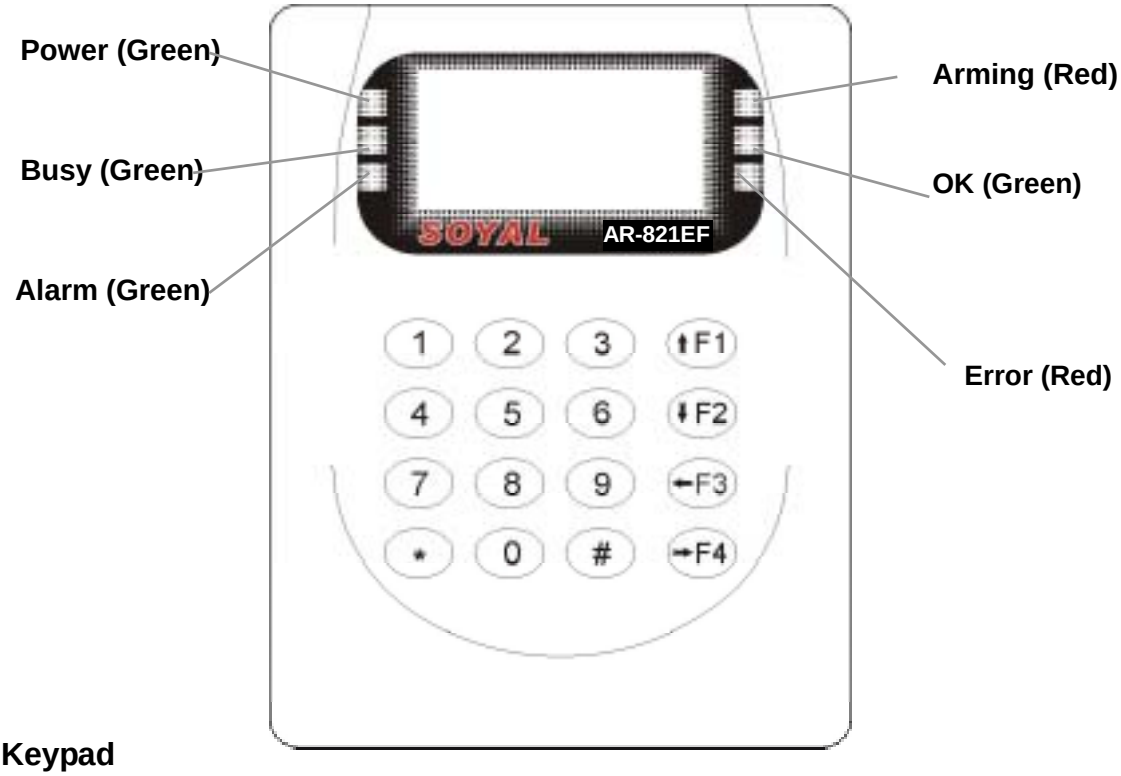
  enter the “FUNCTION MENU”

  Step2: Tools (Function 5)

  Step3: Informations (Function 7)

  AR-821EF(i) 6vx
  Users : 00000
  Users FPs : 0000

3. Front Panel & Functions



Keypad

	Attendance	
	Press 1 time	Press 2 times
F1 Up	Duty on	Break out
F2 Down	Duty off	Break RTN
F3 Correct	Overtime on	Go
F4	Overtime off	Return
＊ Esc		
＃ Enter		

Other:

◎ Press [*] + [Master Code] (default : 123456, changeable) + [#], to enter “Function Menu”

◎ Press [*] + [#] to lock / unlock keypad immed.

Functions:

1. System will automatically exit from FUNCTION MENU, if no key or card entry is made within 30 seconds.
2. In FUNCTION MENU, LED [BUSY] will flash continuously.
3. In card access mode, flashing valid card on the unit

   LED [OK] will light up, a beep sound and LCD panel message shown [OK].
4. Flashing invalid card on the unit on the unit

   LED [ERROR] light up, two beeps sound and LCD panel message shown [Card Number Err!].
5. In card learn mode, after flash card, red LED [ERROR] light up, two beeps and LCD panel message shown [Same Card Existed] mean that same card have existed in controller.
6. In anti-pass-back access mode, red LED [ERROR] light up, a beep and LCD panel message shown [Anti-pass Error !] mean that user violates access function.
7. Green LED [ARMING] light up in “Arming On” states.
8. Red LED [ALARM] lights up if any abnormal condition arisen.
9. Continuous wrong “PIN Code” or “Master Code” will make keypad locked for 30 seconds, LED [BUSY] light up, LED [POWER] light off, and LCD panel shown [keyboard Locked].
10. With 701 Server, the master could set up “Max. Error Times” for PIN Code & Master Code himself. (Default: 3 times)
11. Transmission:

    Receive (Green) lights up when it receives message from PC or its external reader.

    Send (Red) lights up when AR-821EFi sends data to PC.

4. Access Mode

Pre-explanation:

Arming PWD (4 digits)

- Default value: 1234
- Could be setup via Function Menu (Function 38)
- Or, via 701 Server\ 821E/821EF Parameter Setting

Duress Code (4 sets, 4 digits)

- Default value: 1111 ; 2222 ; 3333 ; 4444
- Could be setup via Function Menu (Function 48)
- Or, via 701 Server\ 821E/821EF Parameter Setting

PIN Code (4 digits)

- Could be setup via Function Menu (Function 21)
- Or, via 701 Client \ Setting \ User card

Personal fingerprint

- Enroll (Function 26)
- Delete (Function 27)
- Start (Function 49)
- How to do when user does not use fingerprint access mode?

  Step1: 701 Client \ Setting \ User card

  Step2: Click “skip FP check” function.

  Step3: this user can access door by flash card or PIN.

4.1 Card Editing

■ After entering Function Mode, user uses following order to edit cards.

Function	Nbr.
Add→Card ID	11
Add→RF learn	12
Delete→Addr	15
Delete→ID#	16
Recover→Addr	17
Recover→ID#	18

■ How to edit ten pcs sequential cards? (Default access mode is Card only)

Step1: [*] + [1] [2] [3] [4] [5] [6] + [#]

enter the “FUNCTION MENU”

Step2: Add/Delete (Function 1)
Step3: Add→RF learn (Function 2)
Step4: Then, LCD display will show as follow:
Please follow LCD display indicator to edit card
Step5: InputStartAddr(0-00999)
Enter 1, start from user no. 1
Step6: Tag Uints (pcs) Must be Sequence (1-00999)
Enter 10
Step7: Close Tag Into RF Area
Present the lowest card code of card to the unit.

Users can select one of the following access modes

4.2 Access Mode

Users can select one of the following access modes

4.2.1 Card Only

- Access the door by flashing card
- Open door & turn Arming on / off: Flash card, then press [Arming PWD] + [F1]
- Not open door & turn arming on / off: Press [*] + [Arming PWD], then flash card

4.2.2 Card or PIN

Must in networking condition, running 701 Server.

(701 server \ 821E / 829E Parameter Setting \ Open door via P.I.N. selection)

4.2.2.1 Serial Num. + PIN (Default)

- Same as Card Only
- Or, press keypad

→ User address (5 digit), then PIN code & [#]

→ Open door & turn Arming on / off:

User address, press PIN code & [#], then [Arming PWD] + [F1]

→ Not open door & turn arming on / off: Not available

● How to set access mode of user is card or PIN?

Step1: [*] + [1] [2] [3] [4] [5] [6] + [#]

enter the “FUNCTION MENU”

Step2: User Setting (Function 2)

Step3: Access Mode (Function 2)

Step4: Enter user number, Then, LCD display will show as follow:

1:Card 2:or PIN 3:& PIN 4:Pause Data: 1

Please select number 2:or PIN

Step5: Return to main menu to set the password of user

Step6: User Setting (Function 2)

Step7: Password (Function 1)

Step8: Enter user number, Then, LCD display will show as follow:

Input 4 Digit No. Range:0001~9999 Data:

4.2.2.2 PIN Only

● Same as Card Only

● Or, press keypad

→ PIN code (4 digit)

→ Open door & turn Arming on / off:

PIN code & [#], then [Arming PWD] + [F1]

→ Not open door & turn arming on / off: Not available

● Under Fingerprint Access mode, this mode won’t be available.

● How to set access mode of user is PIN only?

Step1: [*] + [1] [2] [3] [4] [5] [6] + [#]

enter the “FUNCTION MENU”

Step2: User Setting (Function 2)

Step3: Access Mode (Function 2)

Step4: Enter user number, Then, LCD display will show as follow:

1:Card 2:or PIN 3:& PIN 4:Pause Data: 1

Please select number 2:or PIN

Step5: Return to main menu to set the password of user

Step6: User Setting (Function 2)

Step7: Password (Function 1)

Step8: Enter user number, Then, LCD display will show as follow:
Input 4 Digit No. Range:0001~9999 Data:

4.2.3 Card and PIN

- Flash card, then press PIN code & [#]
- Open door & turn Arming on / off:

  Flash card, press PIN code & [#], then [Arming PWD] + [F1]
- Not open door & turn arming on / off: Not available
- How to set access mode of user is card and PIN?

Step1: [*] + [1] [2] [3] [4] [5] [6] + [#]
enter the “FUNCTION MENU”

Step2: User Setting (Function 2)

Step3: Access Mode (Function 2)

Step4: Enter user number, Then, LCD display will show as follow:
1:Card 2:or PIN 3:& PIN 4:Pause Data: 1
Please select number 3: & PIN

Step5: Return to main menu to set the password of user

Step6: User Setting (Function 2)

Step7: Password (Function 1)

Step8: Enter user number . Then, LCD display will show as follow:

Input 4 Digit No. Range:0001~9999 Data:

4.2.4 Pause

- Sam as Card Only
- Please notice that select will make the user invalid

4.3 Duress function

- This function could help users to send a message to the computer asking for help.
- Only available in networking state, running 701 Server and setting 4 sets of Duress code on PC. (Anyone of these 4 sets is workable.)
- This function is not available for CARD ONLY and PIN ONLY access.

Access Mode	Command Format
Card Only	Not available
Card and PIN	Flash card, then press Duress code & #
PIN Only	Not available
Users add and PIN	Press user add., then Duress code & #

Note: User can access door by duress code instead of PIN under card or PIN access mode, but it will be shown ask for help message in 701 Client \ Daily Transaction Record.

4.4 PIN changeable

- AR-821EFi connects with PC, running 701 client and **set PIN code variable.**

  By user: Flash card, then press PIN code (4 digit) twice and #

  By 701 client \ setting \ user card

- Not connecting with PC

  Entering Function menu \ User setting \ Password

5. Fingerprint settings

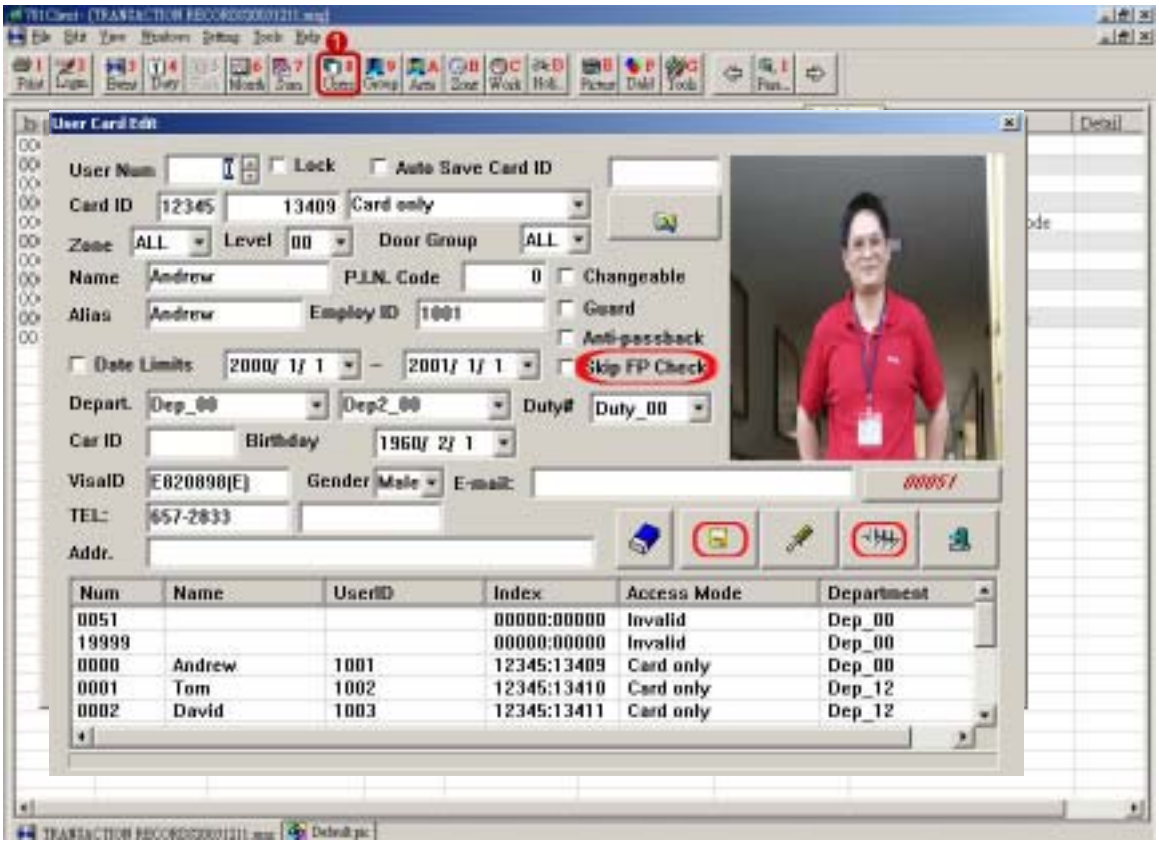
Feature description:

- Everybody can enroll one or two fingerprint to the AR-821EF(i).

  At least 720 users and at most 1450 users can access door by fingerprint.

- Users address don't have any limitation that the range from 00000 to 09999.

- Users who enrolled fingerprint have to access door by their fingerprints but some of the users who doesn't want to use fingerprint that have to change the setting, as follows:



❶ 701 client \ user card

❷ Mark "skip FP check".

❸ Click "Save"

❹ Click "Download" to download data to the AR-821EFi.

5.1 Enroll Fingerprint to the system

1) Press [*] + [Master Code] + [#], to enter “Function Menu”

2) Command: 26.

3) Enter 5-digit [User Address].

4) Operation as follows:

You must put your fingerprint on the unit according to the indication of the unit panel.

a. LCD panel message is [Put 1st finger! Keep CCD clean!] and then enroll same finger in 3 times.

P.S.: If you want to enroll only one fingerprint, please press any key unless F1~F4 to quit the function.

b. LCD panel message is [Put 2nd finger! Keep CCD clean!] and then enroll same finger in 3 times.

c. LCD panel message is [Succeeded] means that 2 fingerprints of the user address were accepted.

Note:

1. Put fingerprint into fixed position before collection sensor light up red for enhancing successful rate of enrolling fingerprint.

2. Please clean CCD mirror before putting another fingerprint.

3. User can register one or two fingerprint up to their choices, however, we usually suggest user to register two fingerprints. (If the registered finger get hurt, he can still use the 2nd fingerprint).

4. If user just want to enroll one fingerprint, user can directly exit enroll picture after user enroll first fingerprint.

5.2 Delete Fingerprint from the system

1) Press [*] + [Master Code] + [#], to enter “Function Menu”

2) Command: 27.

3) Enter 5-digit [User Address] + [#], and LCD will show success which means only delete one fingerprint record.

4) if you want to delete all fingerprint records that you have to input [user address：9999] + [#]

5.3 Start Fingerprint operation

1) Press [*] + [Master Code] + [#], to enter “Function Menu”

2) Command: 49.

3) 1.YES 2. NO

5.4 User Access mode (By fingerprint):

5.4.1 card + fingerprint

User can access door by flash card and put fingerprint on the sensor.

5.4.2 card + PIN +fingerprint

User can access door by flash card, 4-digit [PIN] + [#] and put fingerprint on the sensor.

Please note that use the following access mode must recover user address in advance by using Function 17)

5.4.3 user address + fingerprint

4-digit [users address] + [F4] + fingerprint

User can access door by enter 4-digit [users address] + [F4] and put fingerprint on the sensor.

Ex: if user address is 00001 then his fingerprint address is 0001.

6 Quick Guide (Function Menu)

Under Function Menu, you could just press the indicative nbr. to get into concerning set-up screen directly.

Function	Nbr.	Function	Nbr.
Add→Card ID	1→1	Alarm Delay Tm	3→6
Add→RF – learn	1→2	Arming Delay Tm	3→7
Suspend→Addr	1→3	Arming PWD	3→8
Suspend→ID #	1→4		
Delete→Addr	1→5		
Delete→ID #	1→6	Auto Relock	4→1
Recover→Addr	1→7	Egress (R.T.E.)	4→2
Recover→ID #	1→8	Attendance	4→3
Antipass Group	1→9	Master Node	4→4
		Force Open..	4→5
Password	2→1	Close & Stop	4→6
Access Mode	2→2	Anti-pass back	4→7
Extend Options	2→3	Duress Code	4→8
		Check User FP	4→9
Enroll FP	2→6	Language (English)	5→1→1
Delete FP	2→7	Language (Chinese)	5→1→2
		Master Code	5→2
		Master Range	5→3
Node ID	3→1		
Auto Open Zone	3→2	Open Time Zone	5→6
Door Relay Tm	3→3	Information	5→7
Door Close Tm	3→4	Clock Setting	5→8
Alarm Relay Tm	3→5		

7. Function description

31 Node ID — To setup Node ID (default: 001), range from 001 to 254

33 Door Relay Tm — To setup how long the time will be that door close after a card flashing.
Range: 0 ~ 600 (sec.)
To set value “0” will make door keep opening, after 2nd card flashing, then door close. (Default value: 7 sec.)

34 Door Close Tm — Extended time for door opening time.
(Default value: 15 sec.)

35 Alarm Relay Tm — When abnormal condition arisen, how long the alarm will take place.
Range: 0 ~ 600 (sec.)
To set value “0” will make alarm relay keep on until disarming, then alarm relay off. (Default value: 7 sec.)

36 Alarm Delay Tm — The time between setting Alarm on and its real starting working time. (Default value: 1 sec.)

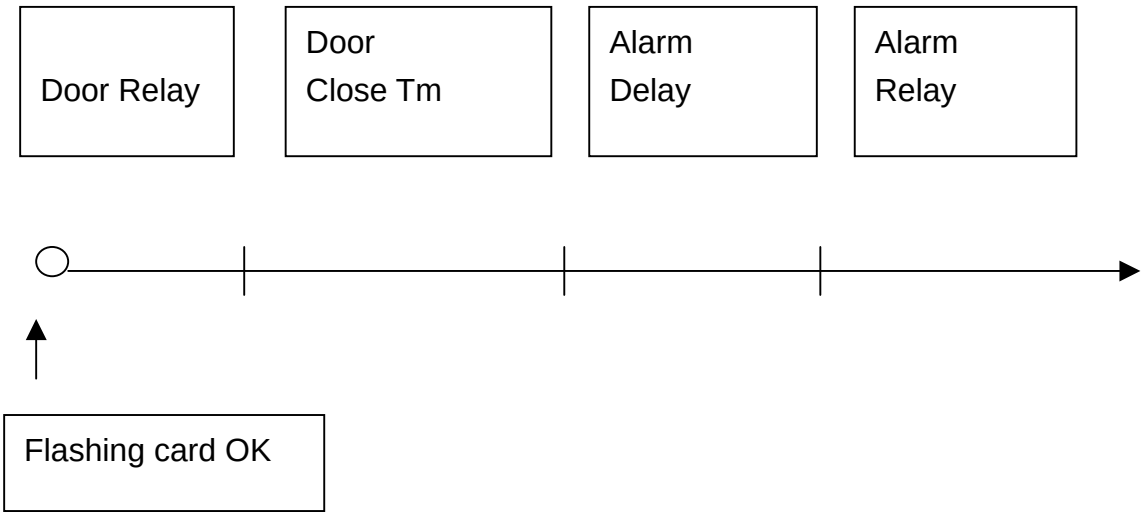
37 Arming Delay Tm — The time between setting Arming on and its real starting working time.
Range: 0 ~ 600 (sec.)
(Default value: 1 sec.)

56 Open TimeZone — Set door open / close automatically.
Details:
1. Enter “Function Menu”
2. Setup opening time first, Function no. 56
3. Auto Open Zone, Function no. 32
   1: Yes 2: No

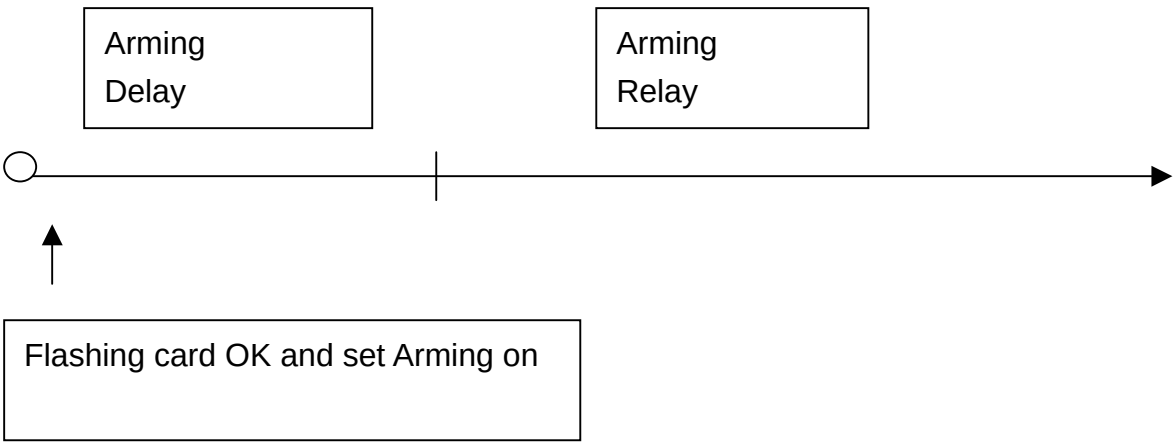
Drawing explanation:

1. Time schedule for Door Relay, Wait Delay (Door Close Tm),

Alarm Delay, Alarm Relay



2. Arming Delay, Arming on



If abnormal conditions arisen, will cause Alarm
E.g. Door open too long (over allowed time)
Force open
Violating anti-pass back regulation

8. Special designed

8.1 AR-821EF(i) connected with 2 pcs of AR-661U long-range reader (Set one AR-661U being Exit reader and the other one being Entry reader) to apply to Anti-pass back.

- CPU version must be at least 5.4 or up.
- No special setting up necessary for AR-821EF(i).

  ◎Set one AR-661U with wiegand 34 bit format output and the other one with 38 bit.

  (Please refer to manual of AR-661U to have details.)

  ◎Set card to have anti-pass back checking. (Order no. 19)
- This design is especially suitable for car parking control.
- The special design is only workable with AR-661U, not available with AR-721U, AR-721K. (wiegand reader)
- Soyal Product AR-727H (CPU version at least 3.2), AR-721H4 (CPU version at least 3.1V) also has this special design.
- User need to put fingerprint from AR-821EF(i) entry but don't need to put fingerprint from auxiliary WG reader exit in anti-pass-back access mode.

8.2 How to set AR-821EF(i) and one set of wiegand reader (AR-721U, AR-721K or AR-661U) for anti-pass-back application?

Step1: Either way to set networking controller'sparameter setting

By keypad: go to "Function Menu" and enter command 47

By 701 Server \ 821E / 829E Parameter Setting \ Enable Anti-passback

Step2: Either way to set card anti-pass-back function

By keypad: go to "Function Menu" and enter command 19

By 701 client \ setting \ user card \ mark Anti-passback

9 Installation

Steps:

1. Use the screwdriver to screw the mounting plate on the wall.
2. Pull cable ends through the access hole in the mounting plate.

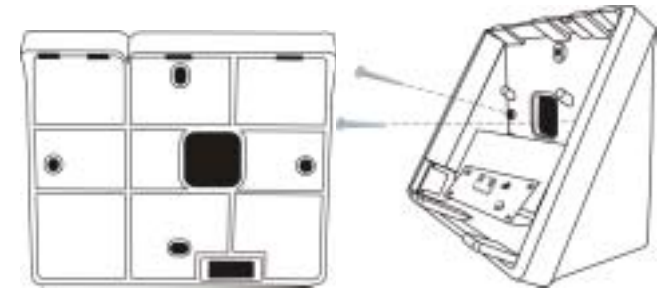
   Connect plug 8 pins to socket CN1

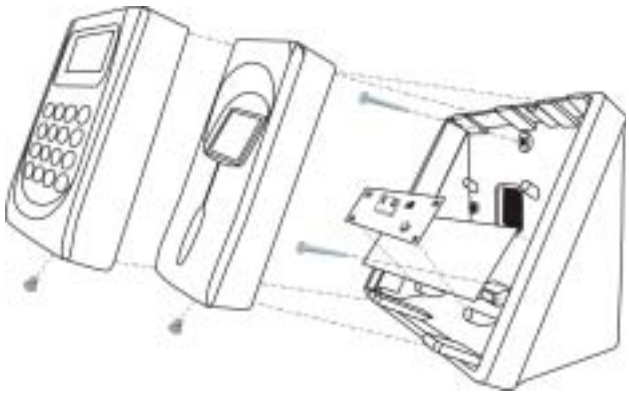
   Connect plug 7 pins to socket CN2

   Connect plug 7 pins to socket CN3

   Connect plug 3 pins to socket CN6

   Please refer to AR-821EF(i) PC board diagram
3. Attach AR-821EF(i) to the mounting plate and install screw (supplied) into the hole at the bottom with the Allen wrench (supplied).
4. Apply power. Green LED [POWER] will light up, a beep sound and LCD panel message will show up.





Installation Notice:

1. The distance between AR-821EF(i) and its auxiliary reader should be more than 50 cm and less than 12 meter. (Suggested value) AR-821EF(i)
2. The reading range of AR-821EF(i) will be up to15 cm. However, when AR-821EF(i) or its auxiliary reader is mounted directly on a metal surface, the reading distance decreases slightly. To reduce this effect, we suggest inserting a wood or plastic between the mounting surface and the unit.

3. Exit Switch input must be a dry contact, without voltage present.

4. AR-821EF(i) does not supply power to operate electric strike or magnetic locks, a separated power supply are required.

   Refer to strike or magnetic lock manufactures instructions, if common power supply is used for both AR-821EF(i) and electronic door lock; make sure to install the diode, which is provided with AR-821EF(i).

5. Power supply should be at least 9 VDC to max. 24 VDC and at least 3W. DC power should be clean and filtered with no more than 0.3 VAC ripple (Peak to Peak). Do not run AC power in the same cable with DC power to AR-821EF(i). While it is always preferable to use a separate power supply for AR-821EF and strike.

6. Run the following cables to the AR-821EF(i) location. Conduit is recommended to reduce the effects of EMI/RFI and for physical protection of the wires.

Cable Types and Distances		
Wire Application	**Cable Type**	**Description**
From Power Supply	2-cond, 18-22 AWG	n/a
From Locking Device and power supply or gate operator	2-cond. See Mfr's Specifications	n/a
From external alarm system's Door Monitor Switch (for shunting)	2-cond, 18-22 AWG	100 m
From Exit Button	2-cond, 18-22 AWG	100 m
From Optional Auxiliary Reader	2-cond unshielded 22 AWG, plus a separate 4-cond, shielded 22-24 AWG cable	50 cm - 12 m

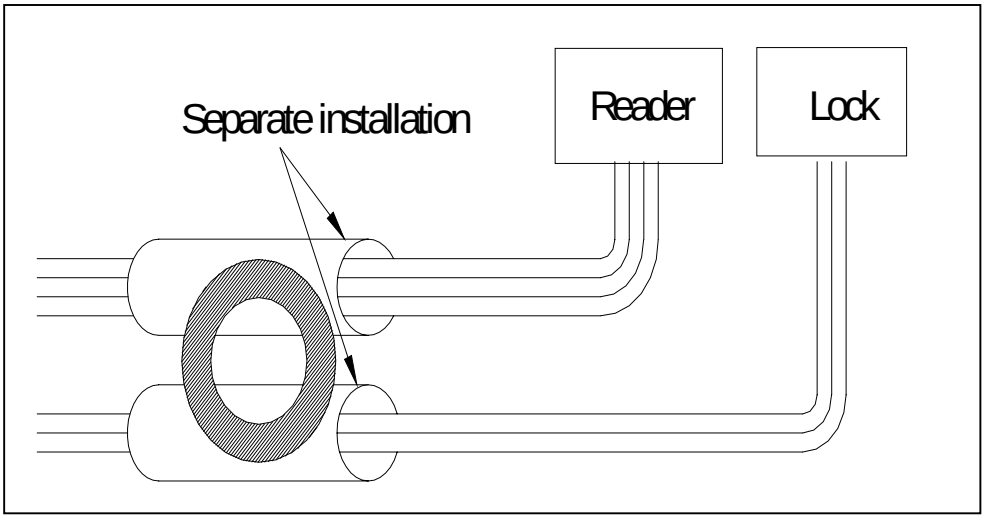
7. Hardware connecting distance suggestion as follows:

a. RS-232: The distance between PC and converter (AR-701CM) can not be more than 2 meters

b. RS-485: The distance between converter (AR-701CM) and the farthest controller (or reader) can not be more than 300 meters.

c. Wiegand: The distance between RS-485 reader (or controller) and Wiegand reader can not be more than within 3 to 5 meters.

d. Do not run AC power in the same pipe with communication wire (See drawing 2). It should be separate installation (See drawing 1).

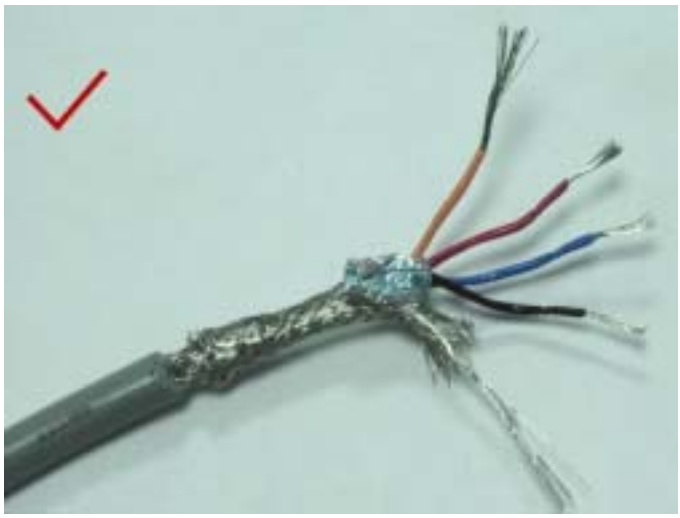


(Drawing 1)

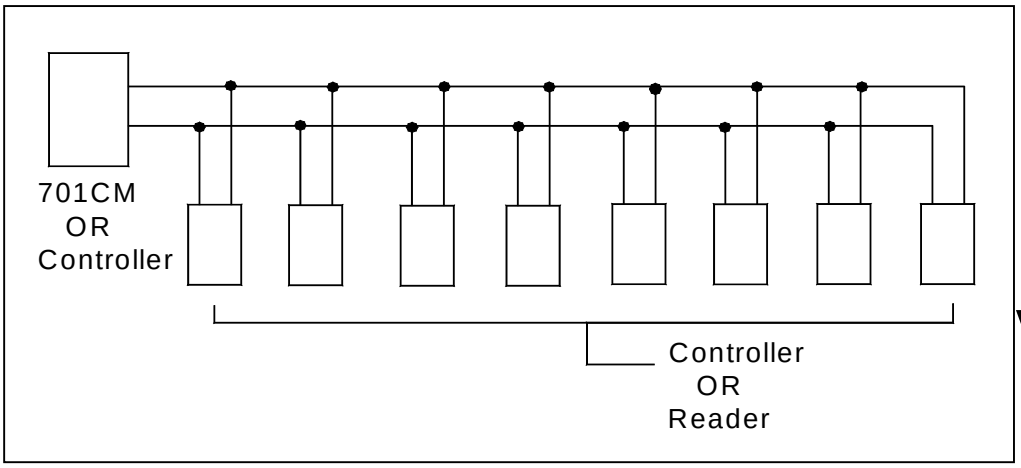
(Drawing 2)

8. We suggest that the customer use ”Shield Twisted Pair” and avoid Star wiring for good communication when installation.

   a. We suggest using the following cable in RS-485 communication.

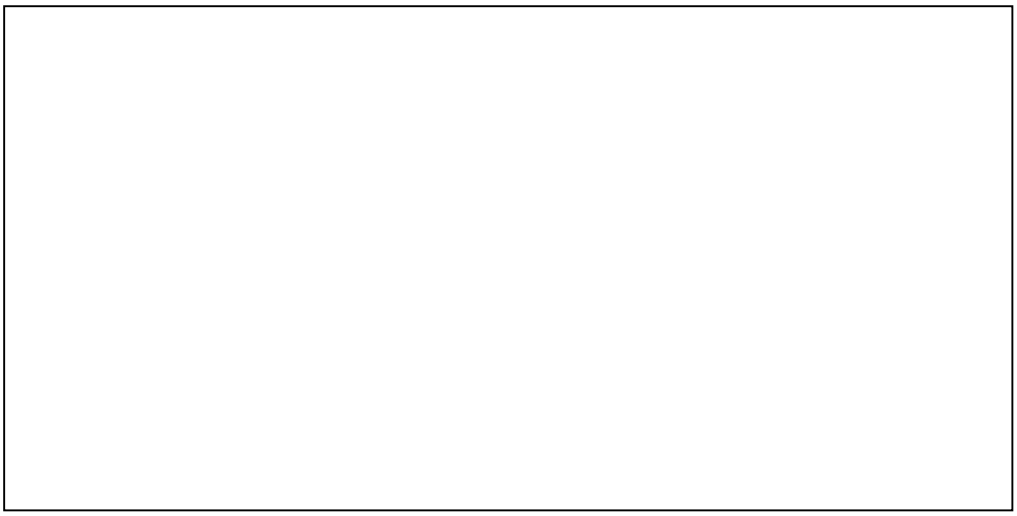


   b. Please use the following installation method, it is correct.



V

c. Don’t use the following installation method, it will cause communication error.



X

10. Terminal Cable

Table 1 - Connector P1 Color Coding			
Wire Application	**Wire**	**Color**	**Description**
Door Relay	1	Blue White	(N.O.)DC24V1Amp
	2	Purple White	(N.C.)DC24V1Amp
Door/Alarm Relay	3	White	(COM)DC24V1Amp
Door Sensor	4	Orange	Negative Trigger Input
Exit Switch	5	Purple	Negative Trigger Input
Alarm Relay	6	Gray	N.O. / N.C. Optional
Power	7	Thick Red	DC Power 12V
	8	Thick Black	DC Power 0V

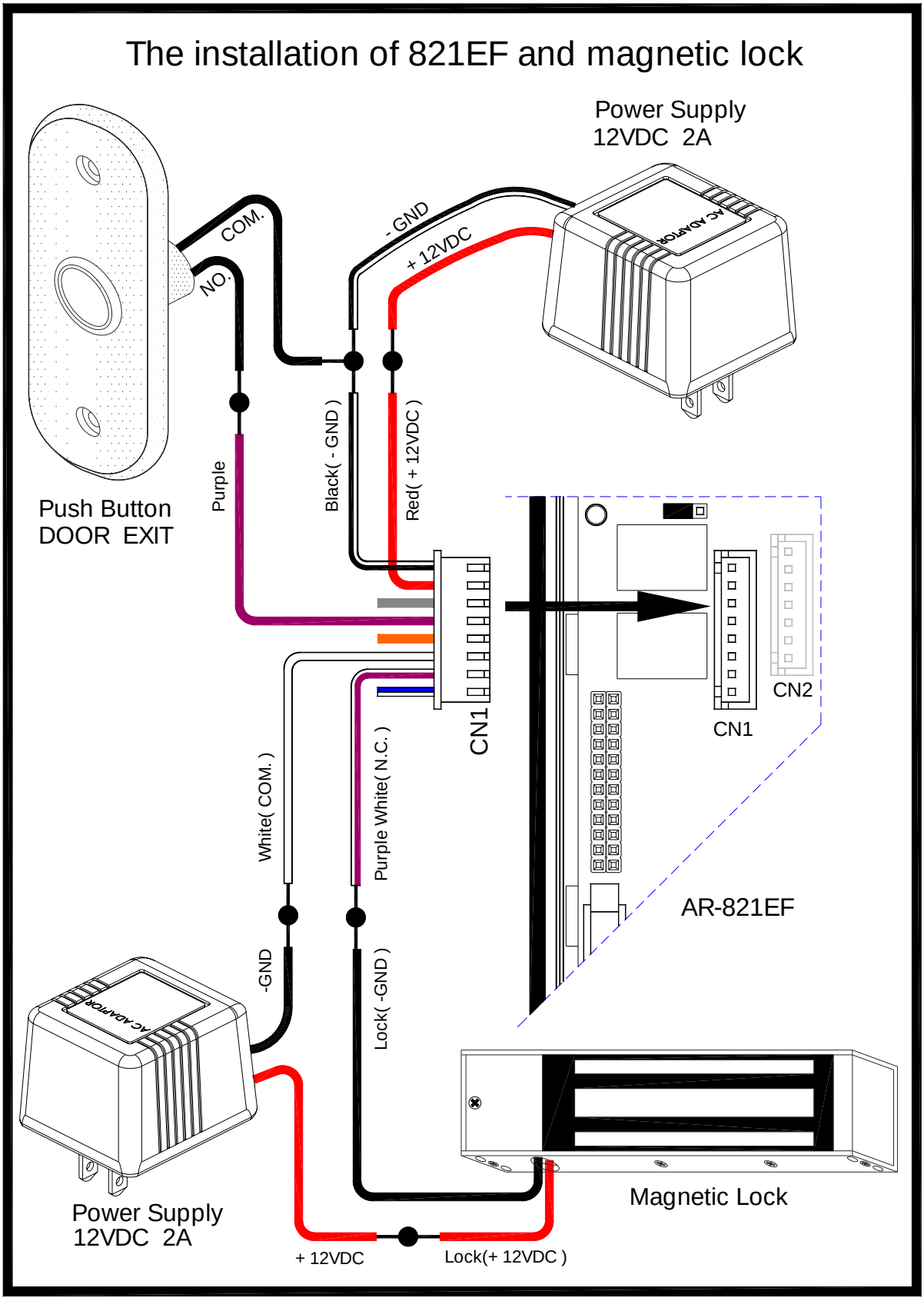
Table 2 - Connector P2 Color Coding			
Wire Application	**Wire**	**Color**	**Description**
Networking	1	Thick Green	RS-485(B-)
	2	Thick Blue	RS-485(A+)
Wiegand	3	Thin Blue	Wiegand DAT:1 Input ABA Clock Input
	4	Thin Green	Wiegand DAT:0 Input ABA Data Input
Beeper	5	Pink	Beeper Output 5V/100mA, Low
LED	6	Brown	LED Green Output 5V/20mA, Max
	7	Yellow	LED Red Output 5V/20mA, Max

Table 3 - Connector P3 Color Coding			
Wire Application	**Wire**	**Color**	**Description**
Tamper Switch	1	Red	N.C.
	2	Orange	COM
	3	Yellow	N.O.

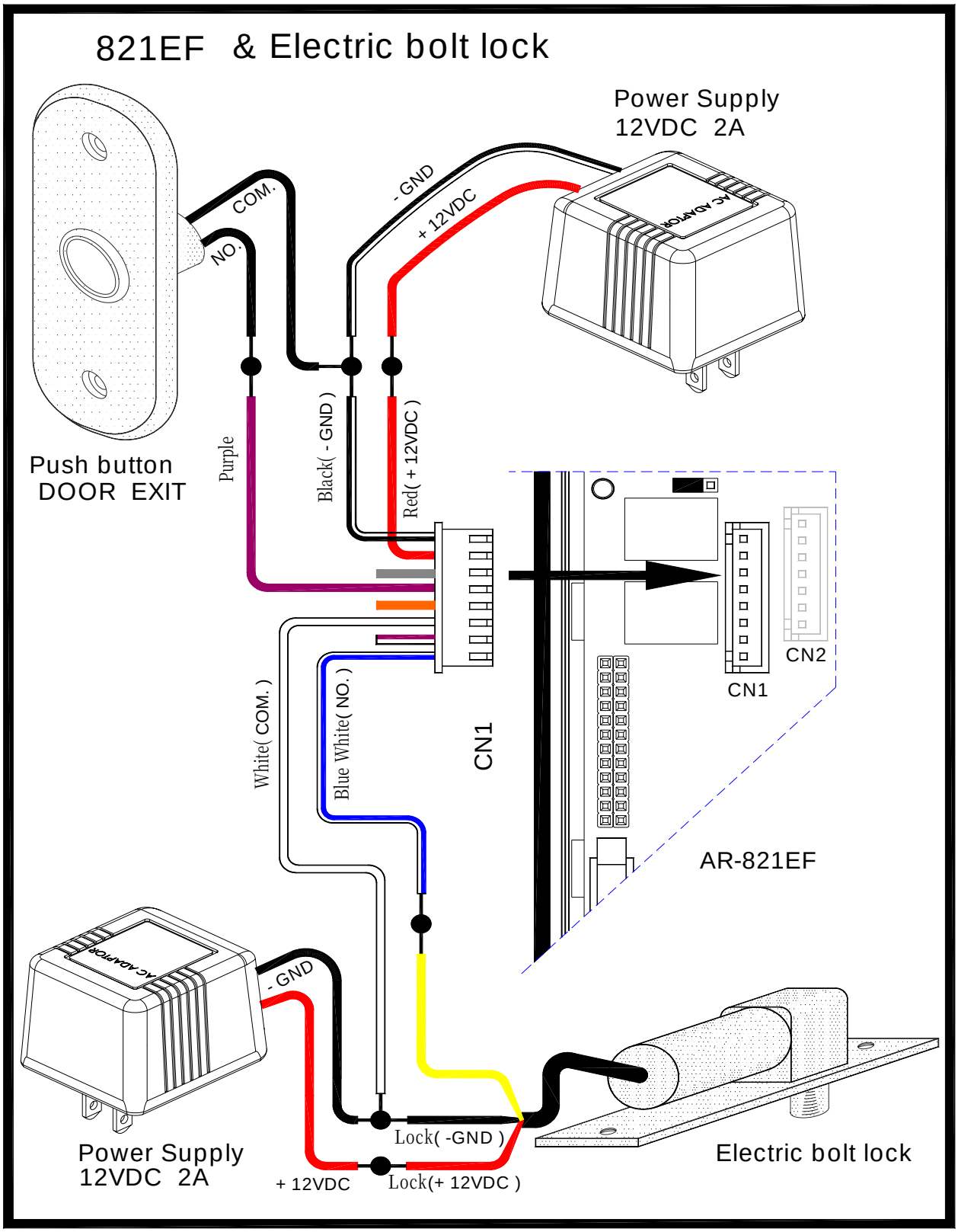
Table 4 - Connector P7 Color Coding			
Function	**Wire**	**Color**	**Description**
Fingerprint	1	Brown	DC Power 0V
	2	Red	DC Power 5V
	3	Orange	RS-232(TX)
	4	Yellow	RS-232(RX)

11. Installation diagram

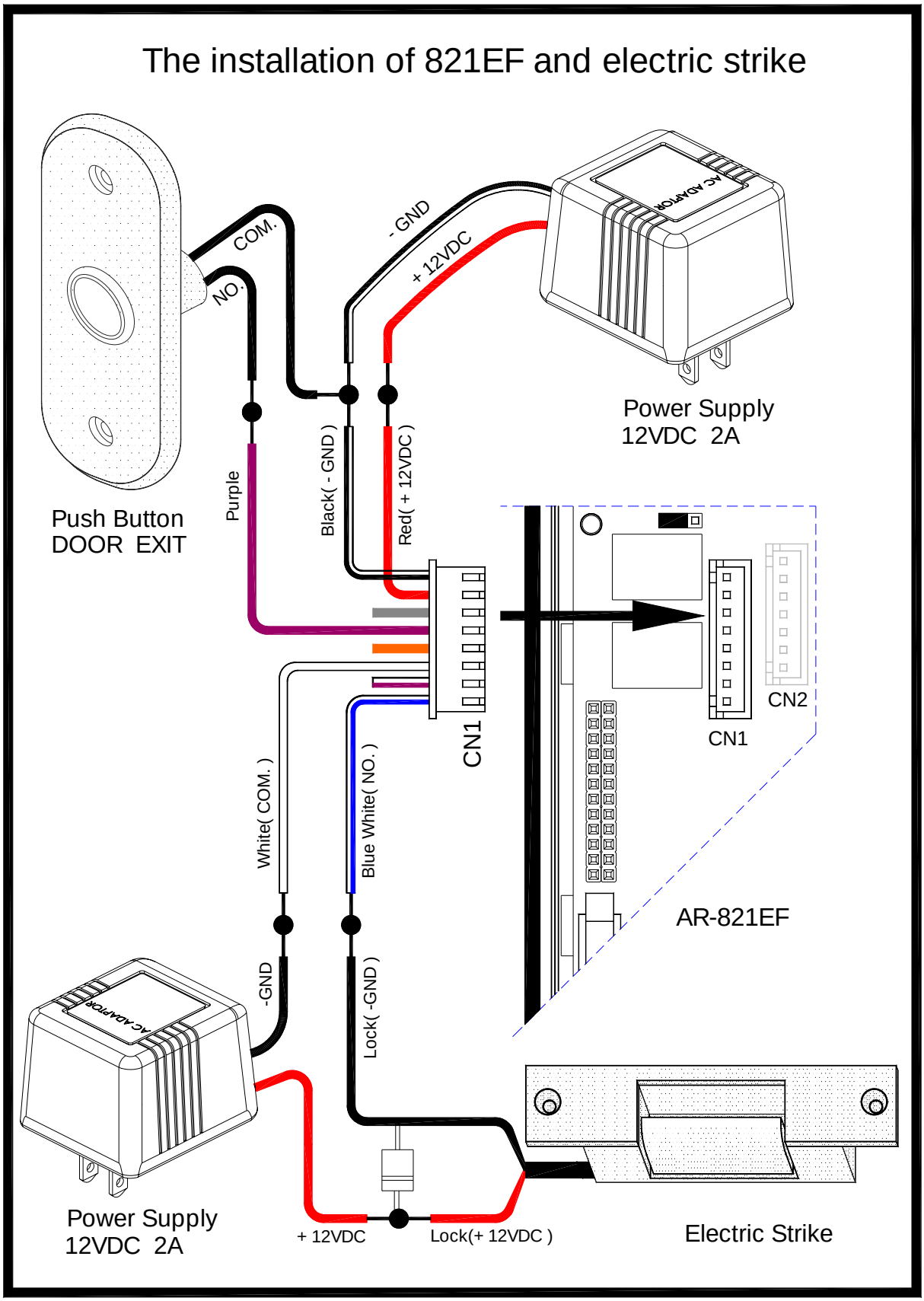
11.1 Magnetic lock



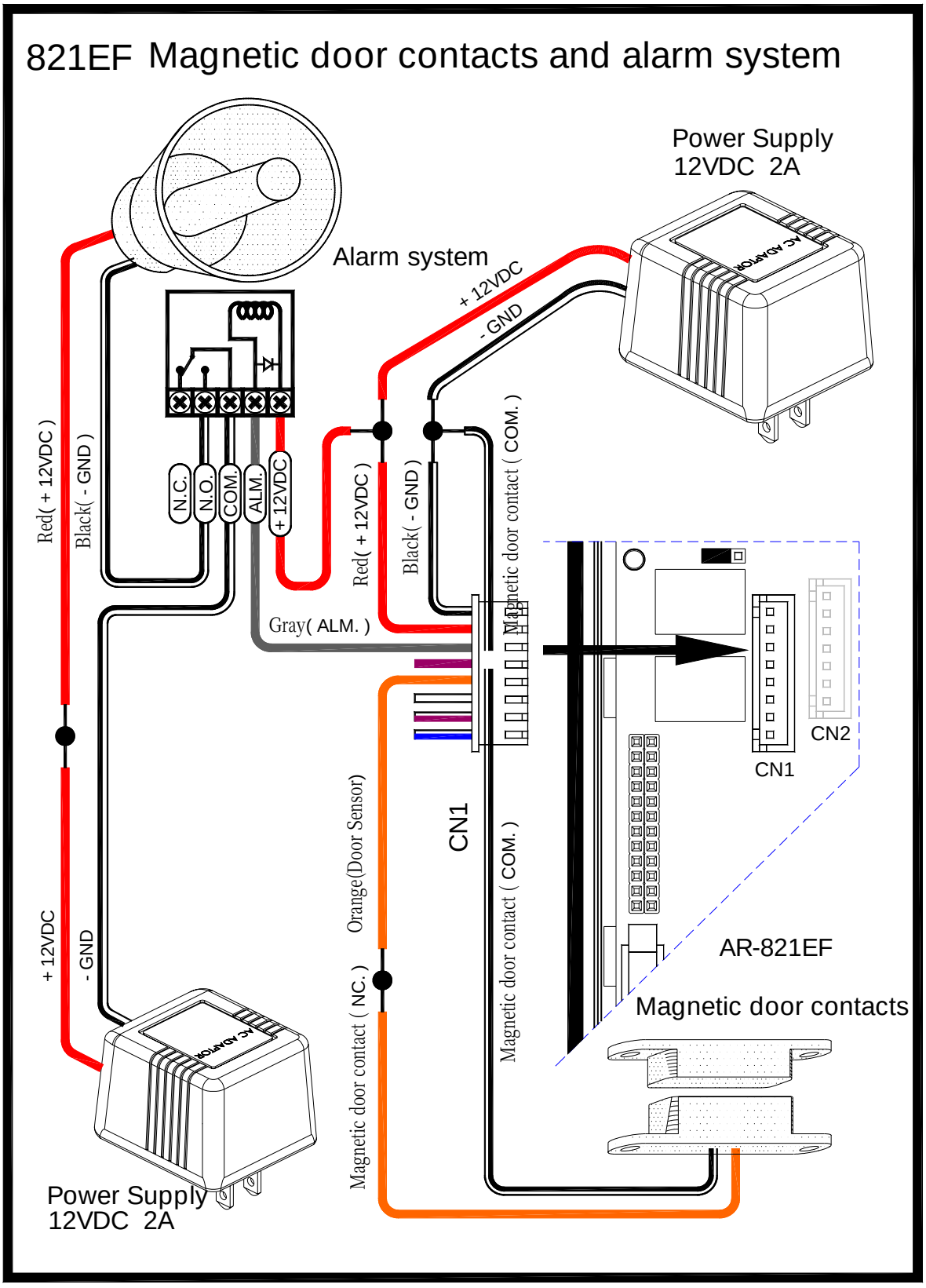
11.2 Electric bolt lock



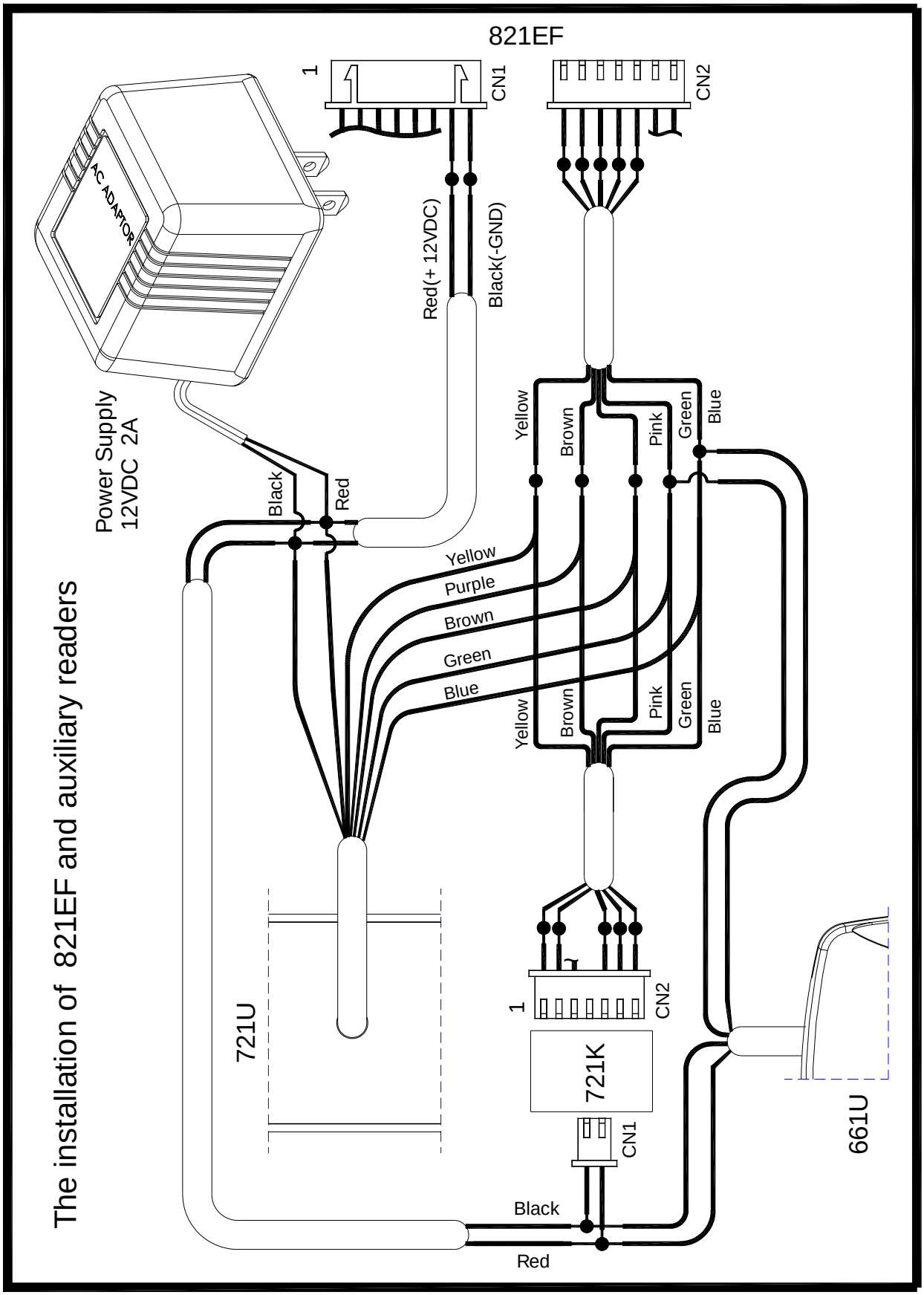
11.3 Electric strike



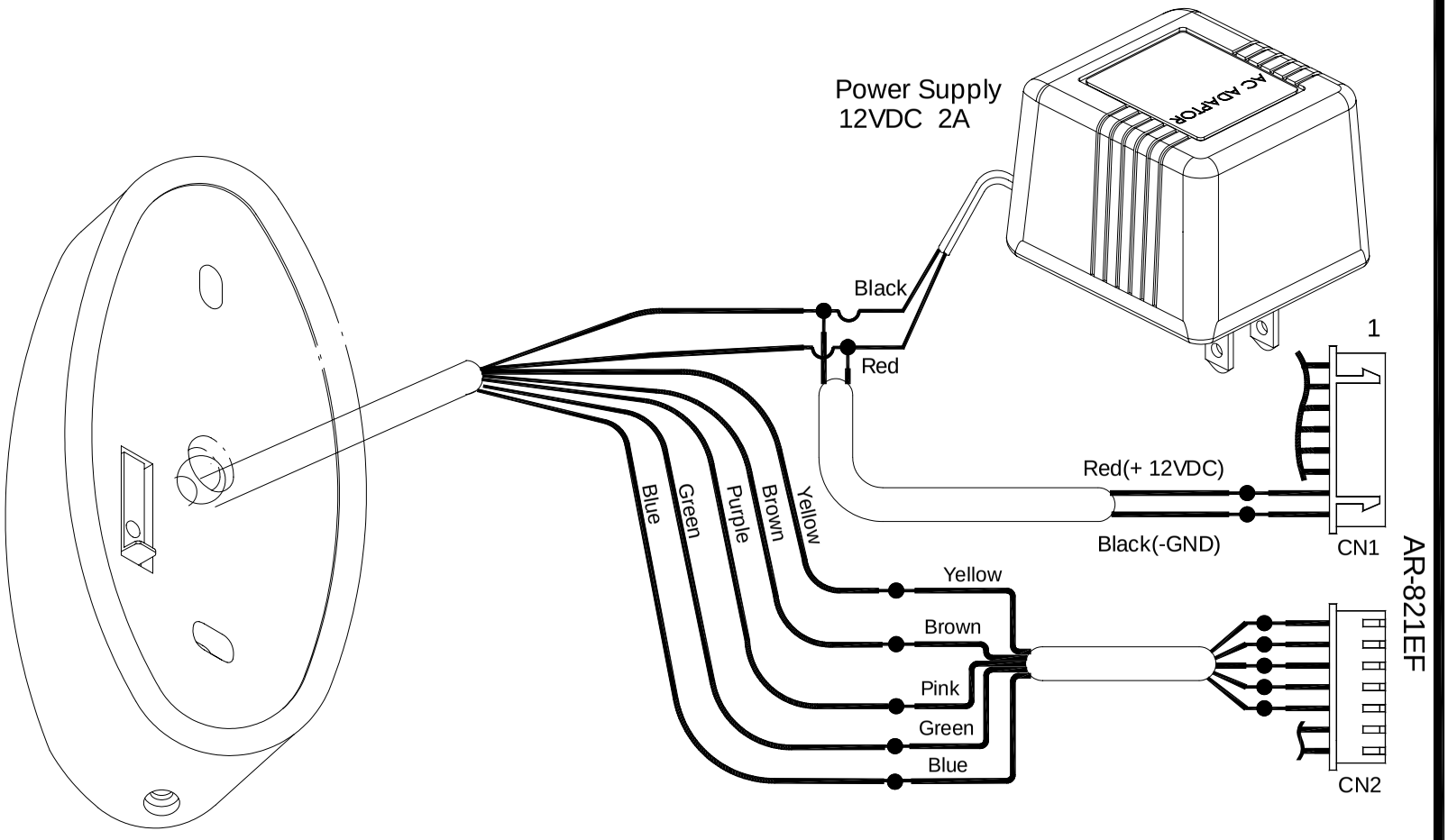
11.4 Magnetic door contacts and alarm system



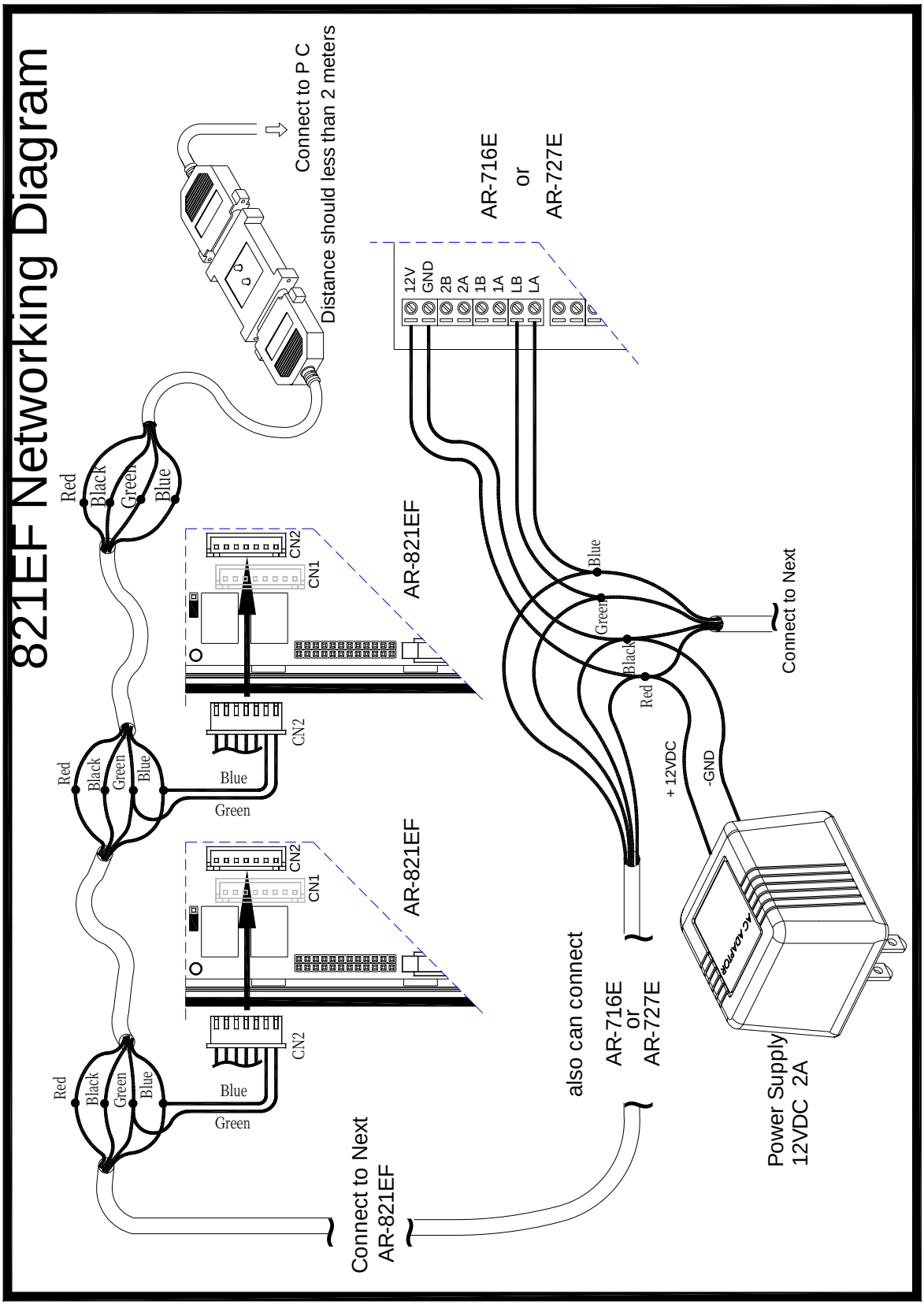
11.5 Wiegand reader



The installation of 821EF and auxiliary readers 737U

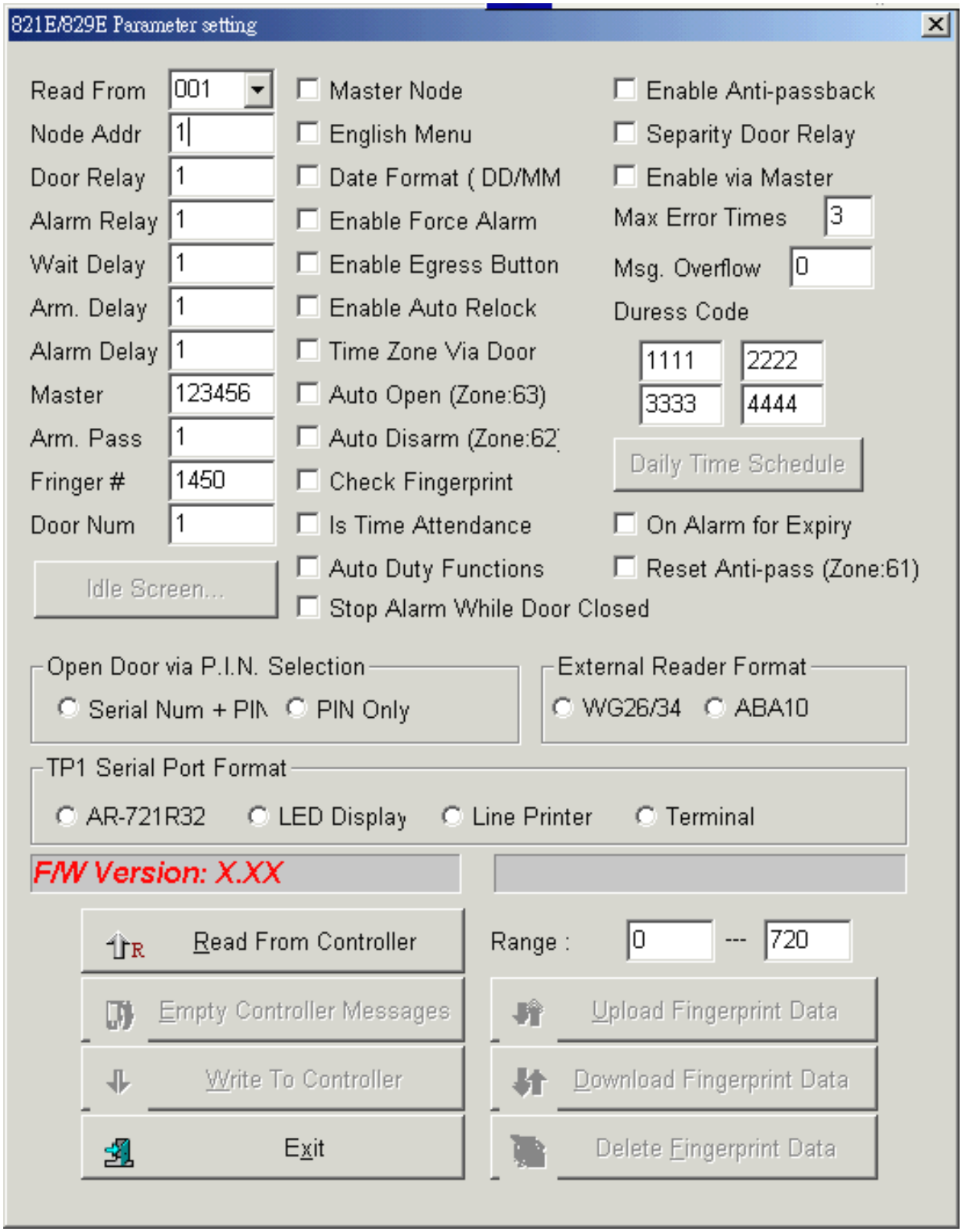


11.6 Networking installation



12.701 Server \ 821E/829E Parameter setting

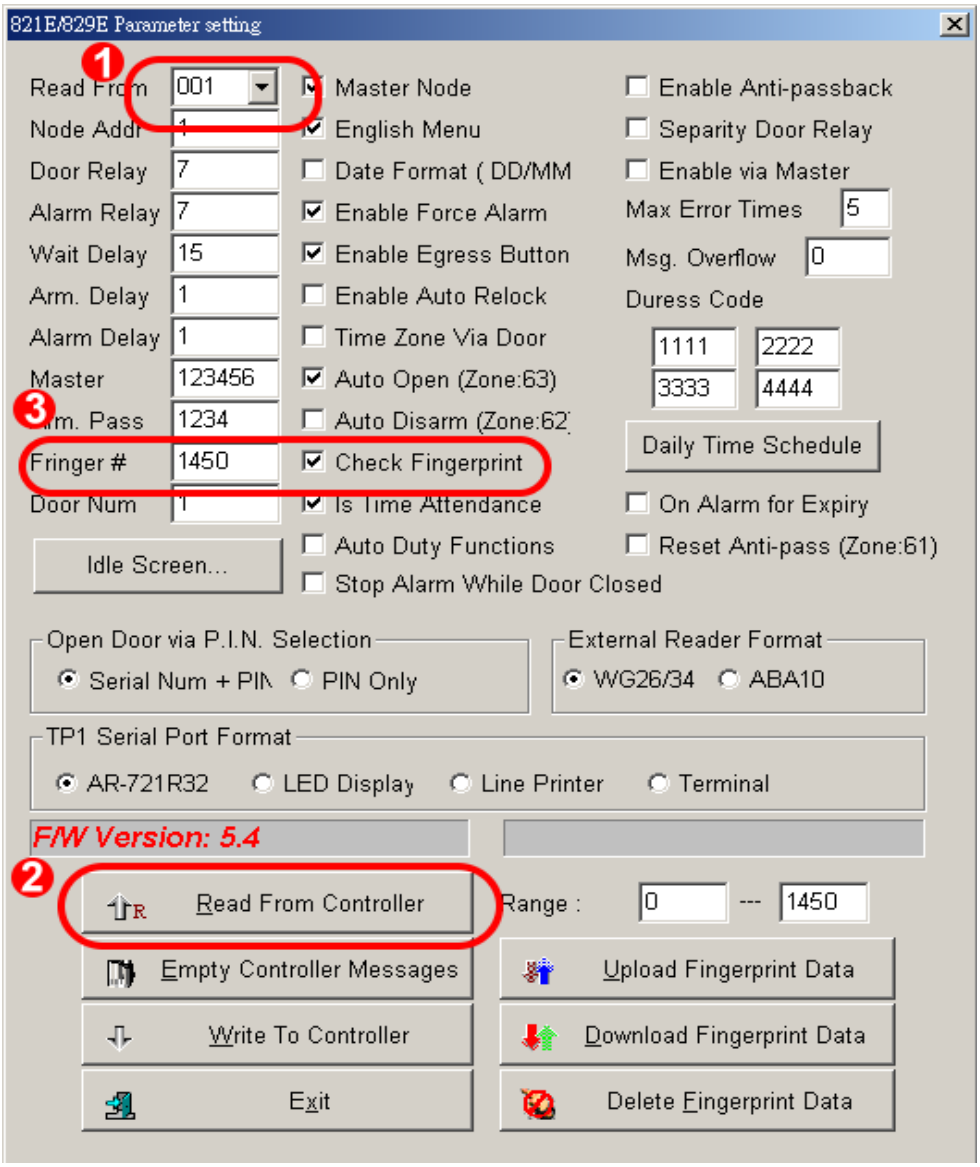
12.1 Accompanied with 701 Server & 701 Client, SOYAL supplied end users to set up advanced & convenient functions.



12.2 How to upload, download and delete the FP database

Fingerprint database can be uploaded and/or downloaded to and from the computer by using 701 server software icon 801E/821E Setting. User is not required to go to all the AR-821EF to register their fingerprint by this function. Whatever is upload, download and delete fingerprint, at first, we must select AR-821EF node and read parameter of the AR-821EF.

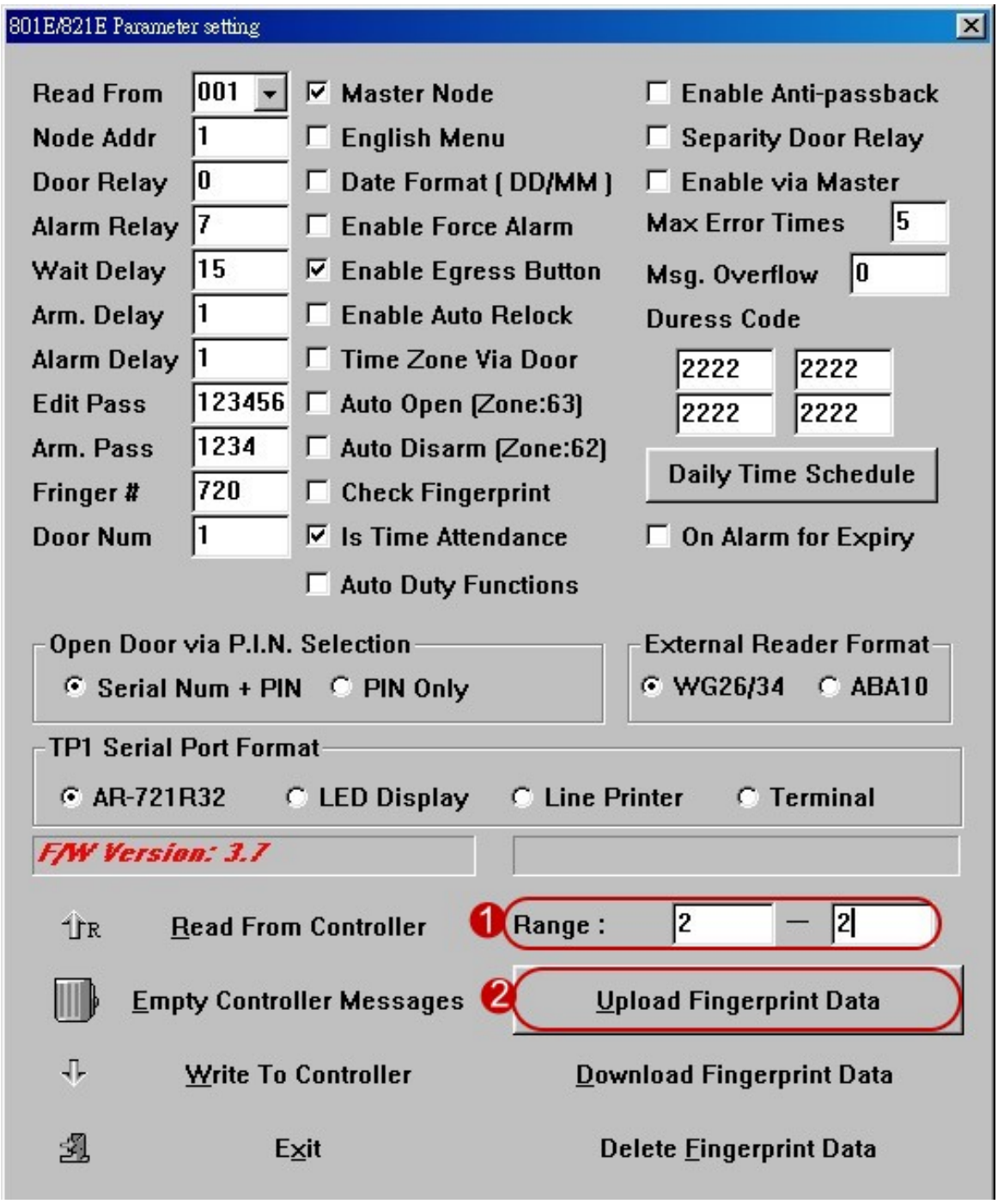
Operating steps are as follows:



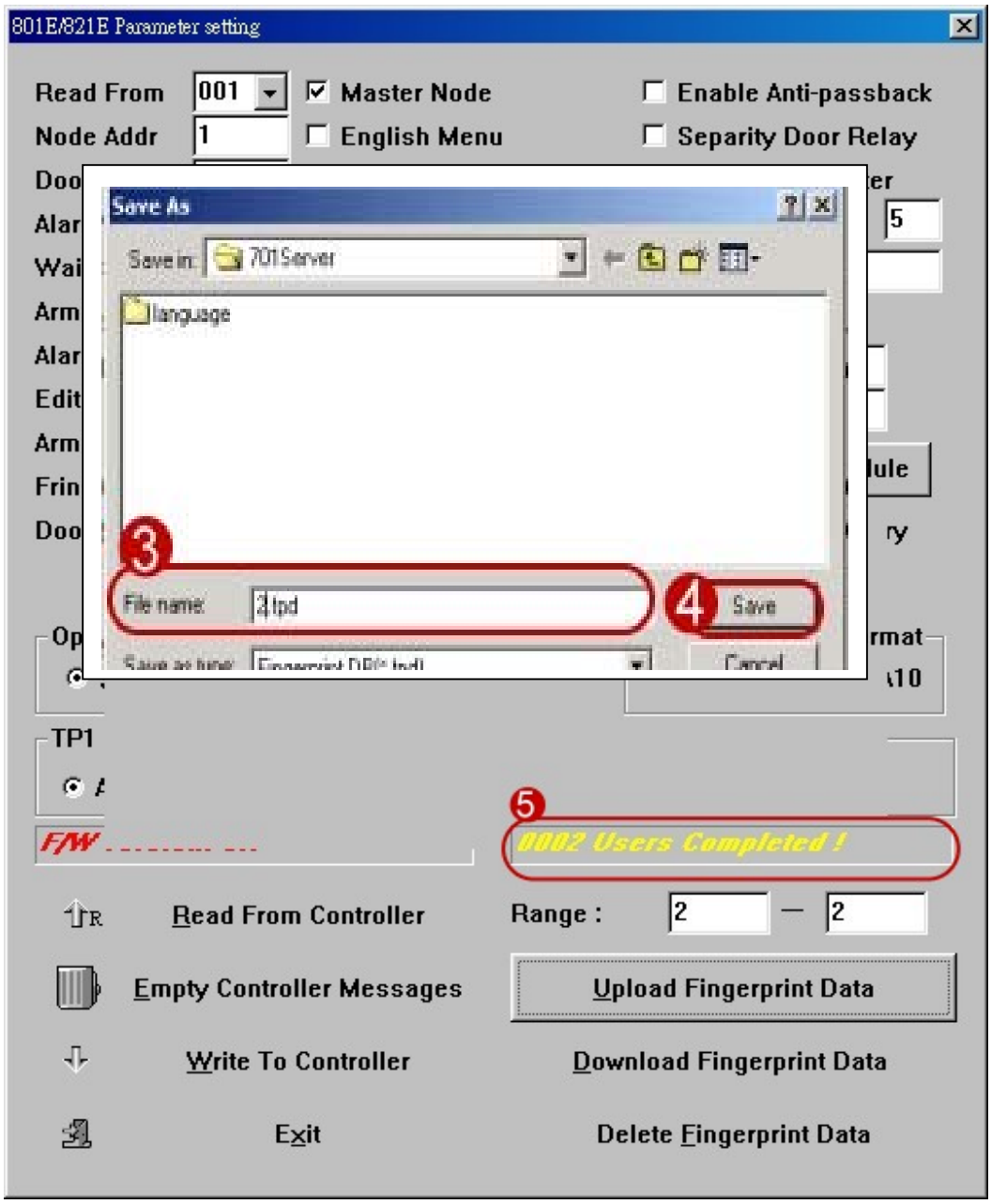
1. Please select the node No. of AR-821EF.
2. Click [Read From Controller].
3. Then here show Fingerprint capacity.

   FP capacity can up to 1450 pcs.

Part 1. Upload fingerprint database to the Computer.

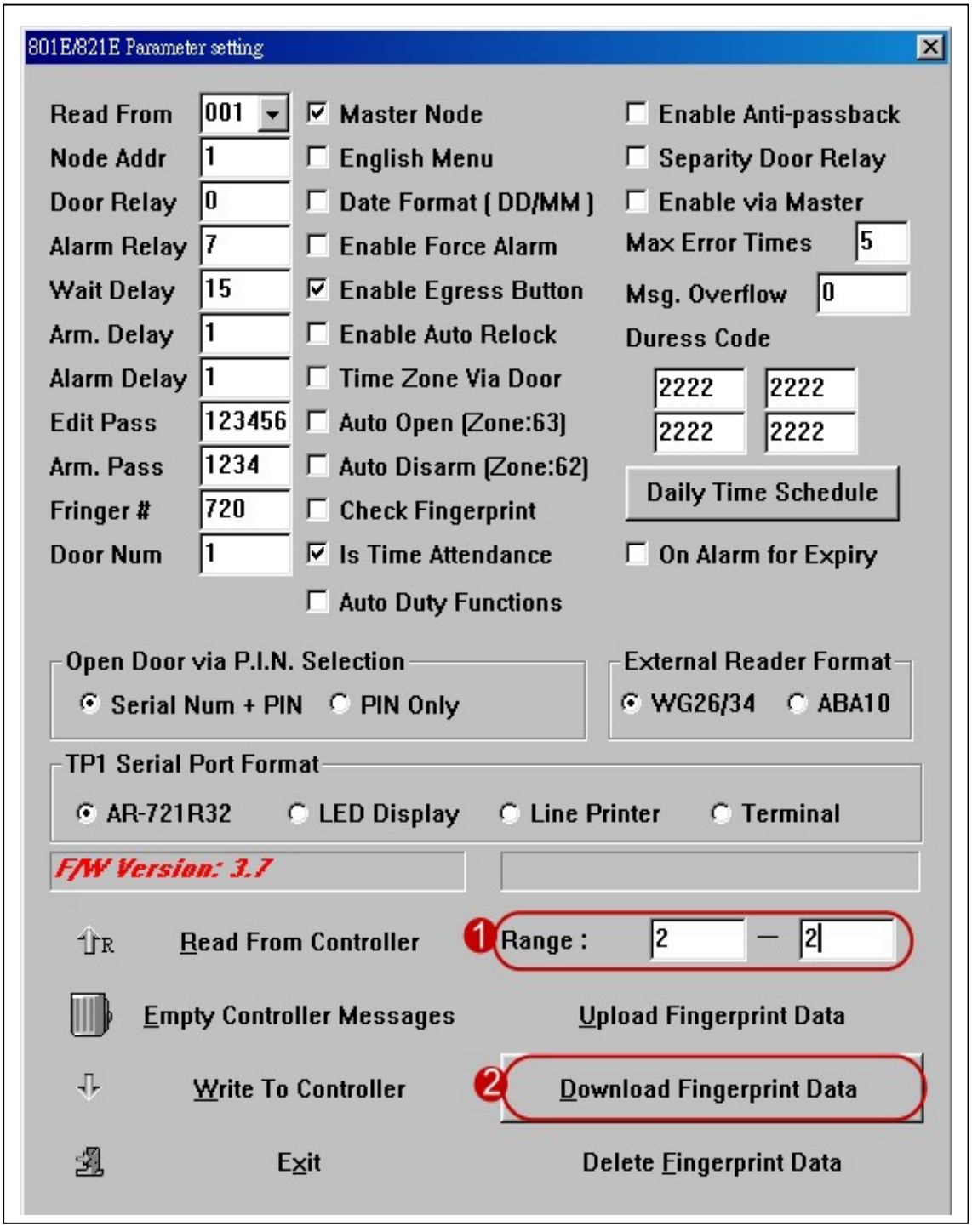


1. Enter the range of the uploaded user number.
2. Click [Upload Fingerprint Data].

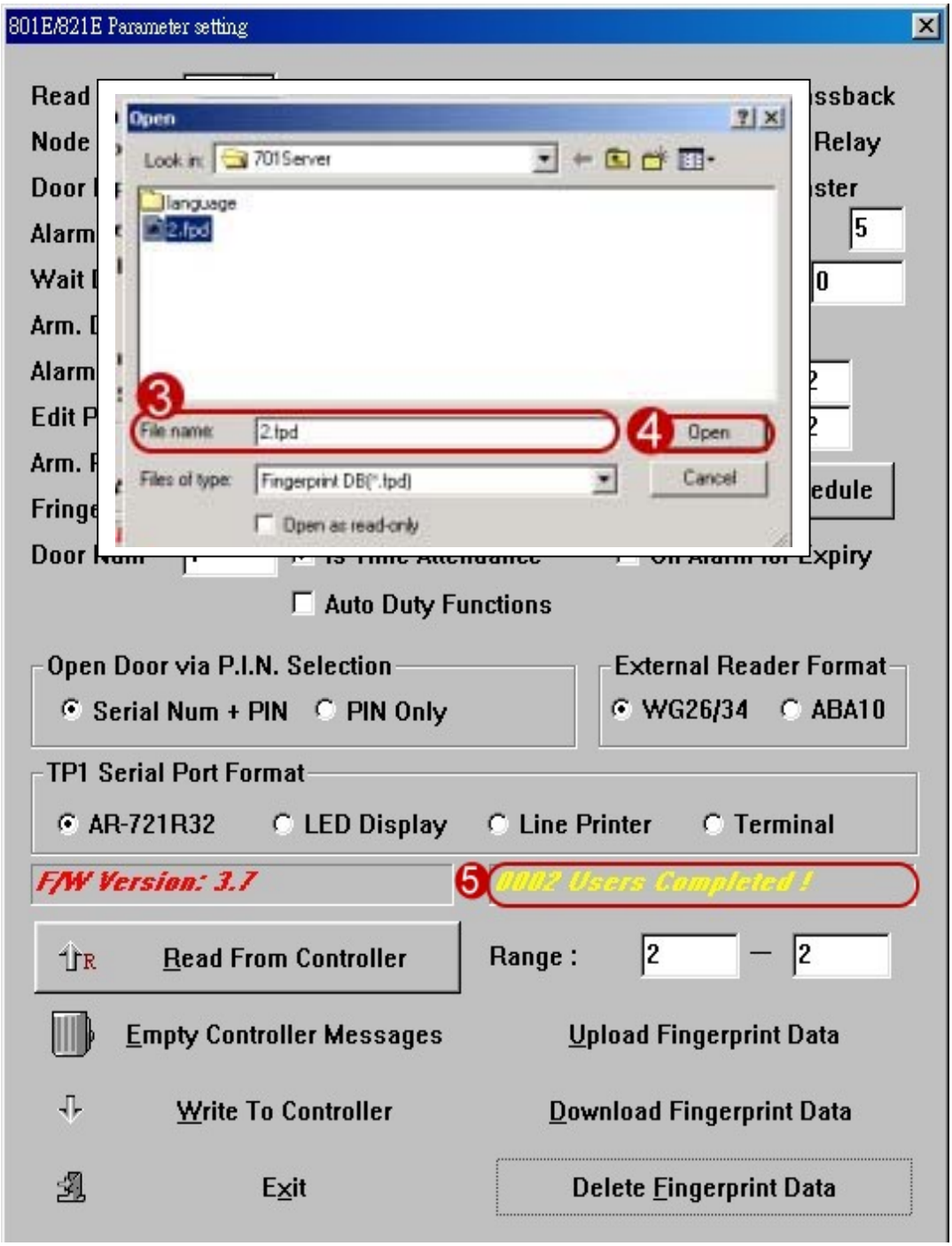


❸ Enter file name of the uploaded user number.
❹ Click [Save].
❺ If the fingerprint of user number 0002 is uploaded ok,
it will show [0002 Users Completed!].

Part 2. Download fingerprint database to the AR-821EF unit



1. Enter the range of the downloaded user number.
2. Click [Download Fingerprint Data].



❸ Click file name of the downloaded user number.

❹ Click [Open].

❺ If the fingerprint of user number 0002 is downloaded ok, it will show [0002 Users Completed!].

※If you wish to connect 2 sets of 821EF (for example, 821EFi A, B), and hope to download fingerprint database from A to B at the same time. Please operate by the following steps :

(1) You can upload your FP data to computer from 821EF A first, (same as **Part 1**)

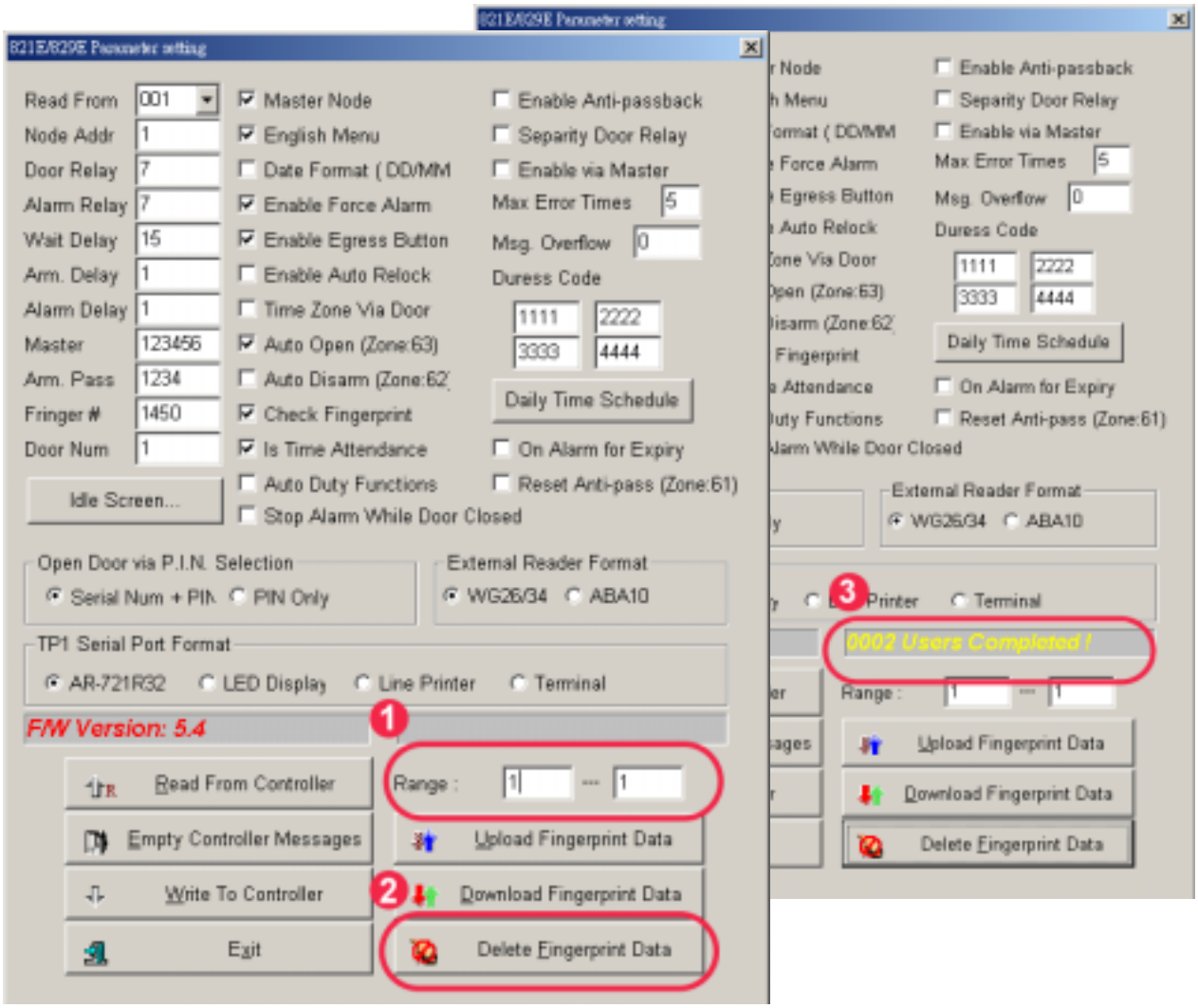
(2) Select the Node ID of 821EF B to read its database.

(3) Reference the steps of **Part 2,** and setting the 821EF B download range to be same as the 821EFi A uploading one.

(4) After setting download range, press the " Download Fingerprint Data ".

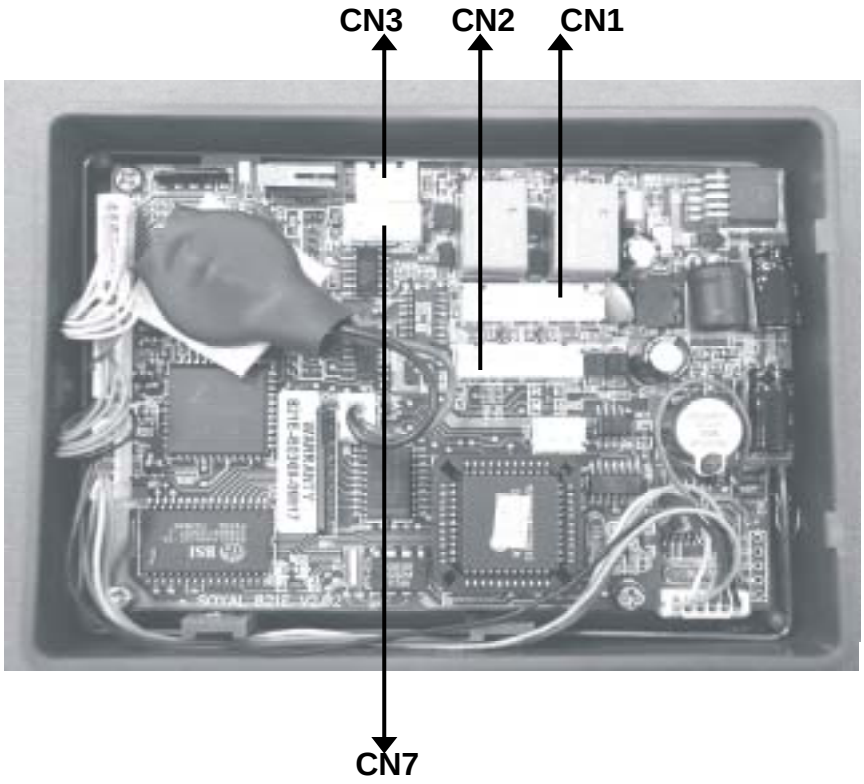
(5) And you can download the A fingerprint database to 821EF B.

Part 3. **Delete fingerprint database on the AR-821EF**



❶ Enter the range of fingerprint you hope to delete.
❷ Select [Delete Fingerprint Data].
❸ According to the view, you can see the data had been deleted successfully.

13. Troubleshooting



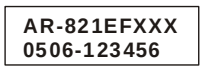
Questions	Answer
No appearance	1. Check power, if it is 9 – 24 VDC adaptor? 2. Check if the polarity is correct?
Master code forgotten	1. Use SOYAL supplied 701 Server software ” 821E/829E Setting” to read the value. 2. Stop power supplying, then pull up battery on PC board for at least 3 min. then, plug in back. **Note.** This action will erase all data and setting (including cards, transaction events etc.) on memory buffer.
Can not connect to PC	1. Check if Transmission LED light up? (Green / Red) 2. Check 701 Server, if set-up is correct? Please refer to 701 Server manual for details. 3. If connecting to PC via AR-701CM converter, check if the power (Green) light up?
How to find out Card ID with a user address?	1. Entering “Function Menu” 2. Press 11 3. Entering “user address”
How many Cards exist in system?	1. Entering “Function Menu” 2. Press 57

14. Return of Products

Please contact the distributor who sold the unit. All service and repairs must be done through an authorized distributor.

15. Warranty

SOYAL warrants that the product(s) shall be free from manufacturing defects in materials and workmanship for a period of twelve (12) month from the date of delivery provided that the product was properly installed and used. The foregoing warranty shall not apply to defects resulting from abuse, misuse, accident, unauthorized alteration or repair, neglect, acts of God (such as floods, fire, etc.). SOYAL shall, at its option, either repair or replace product(s) which prove to be defective within the warranty period. SOYAL will replace any product found to be defective within the first three months of purchase provided said product was properly installed and used. Distributor agrees to insure the product or assume the risk of loss or damage in transit to prepay shipping charges and to use the original shipping container or equivalent. Customers shall seek assistance from the distributor who sold you product(s). Repaired or replaced product(s) are warranted for ninety (90) days from the date of repair or replacement, or for the remainder of the original product's warranty period, whichever is longer.

Note: Don't tear a paster such as 

on the PCB board, because it is SOYAL warranty.

16. Transponder Record Table

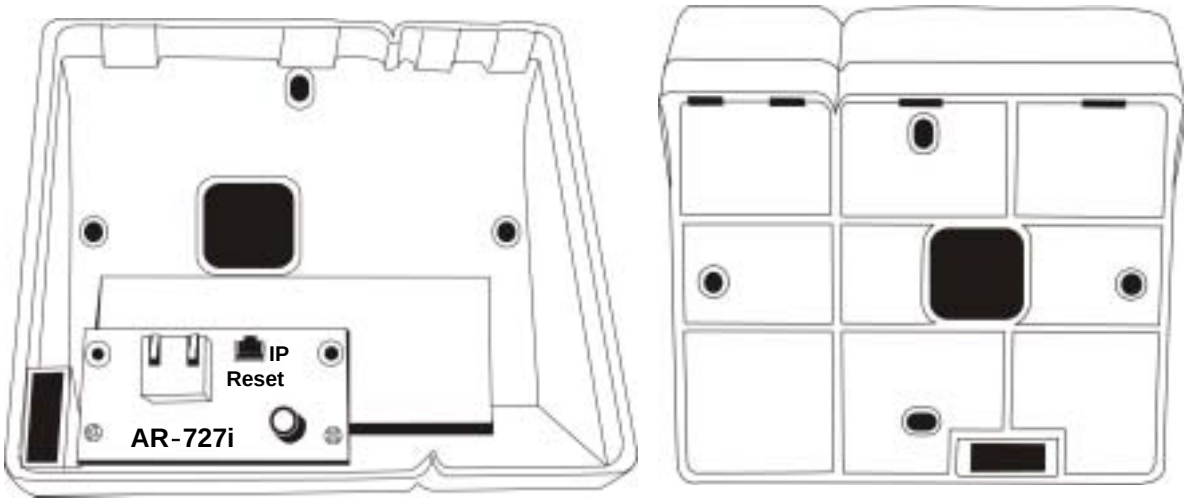
Be sure to record the user number, the user name, the card ID number (site code: card code), and the user code and keep this information in a secure place. A black user log form has been included for purpose. Do not write on this form; use it as a photocopy master.

User Add.	User Name	Site code: Card code	PIN code
Programmed by:		Date:	
Company Name:			
Company Address:			
City:			
Other Information:			

17. Specification

Card Holder		10,000
Access mode		Card only、Card and PIN、PIN only
FP Access mode		Card & FP, Card & PIN & FP, FP address & FP, Function key # + F4 +FP
Panel Display		English、Chinese (standard)
Show alias		00000 - 04999
LCD panel		128*64 dot LCD panel，4 lines message, 16 character / line
Resolution		500DPI
FAR		<0.0001%
FRR		<0.01%
Response TIME		<1.2 Sec.
Matching Mode		1:N ; 1:1
Fingerprint		1450
Limits Date	Start	Support 0000~4999 from Start date to End date
	End	Support 0000~9999 for End date
Transactions		11,000
Buffer prompt		v（LCD and Beep sound）
External reader port		Suitable for all WG、ABA reader 125K、13.56M (Mifare) or 2.4G reader
Networking		RS – 485, 9600,N,8,1
Door Relay		2A / 12V　N.O. / N.C. / COM 0.1 ~ 600 sec. / Latch type
Alarm Relay		2A / 12V　N.O. / N.C. / Jumper selectable 0 ~ 600 sec.
Anti-pass back		V
Door group		255
Time zone		63
Holiday (days)		120
Reading range		8 – 15 cm
Input Voltage		9-24VDC
Power Consumption		<5W
RF Frequency		125 KHz
Environment		-20℃~+75℃
Material		ABS
Dimensions (mm)		132(H)*144(W)*102(D)

18. Network Module



The partial drawing of the bottom of AR-821EFi

- **How to set IP Address ?**

  Please refer to the 『***Appendix : AR-727i Module User Manual***』.

- **How to reset IP Address ?**

  Press IP Reset button more than 5 seconds. After 5 Sec., ACT LED will flash in green color, then AR-821EFi will restore to Factory Default value.

IP Address	192.168.001.127	**Serial Port**	9600,N,8,1
Gateway IP	192.168.001.254	**TCP Port**	1621
Subnet Mask	255.255.255.000	**Password**	none

  - If AR-821EFi was connected to Ethernet, the LINK LED will be light in yellow color.

19. Software configuration

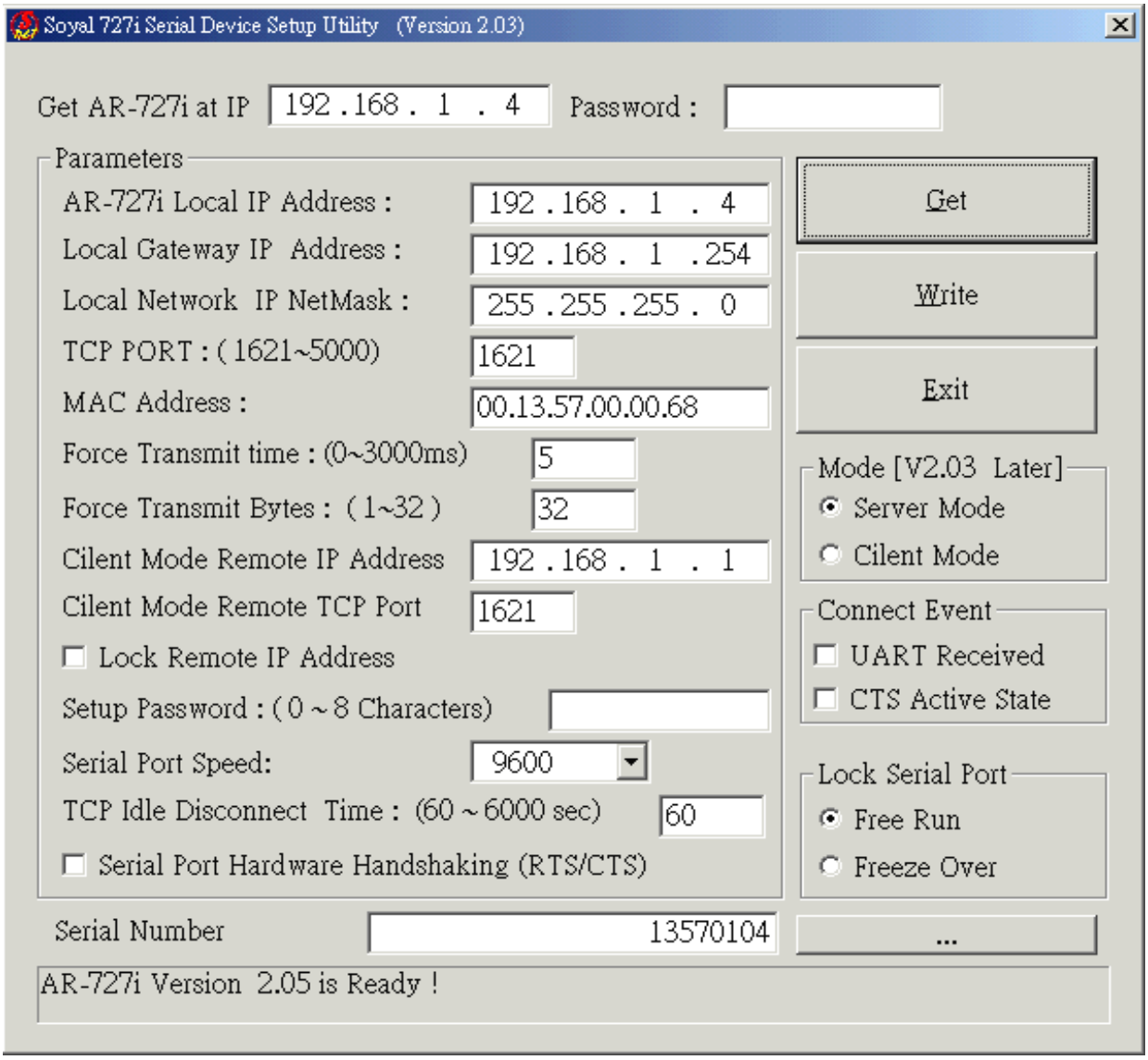
You may use the following methods to configure the IP address assigned to your AR-727i device.

Step 1: Install ” **SoyalTools.exe**” into your PC.

Step 2: Run “Net727” tool.

(Start → Programs → Soyal Software → Net727)

Step 3: Take care of Local IP Address, Gateway, Netmask and TCP Port.


Soyal 727i Serial Device Setup Utility (Version 2.03)
Get AR-727i at IP 192 . 168 . 1 . 4
Password :
Parameters
AR-727i Local IP Address : 192 . 168 . 1 . 4
Local Gateway IP Address : 192 . 168 . 1 . 254
Local Network IP NetMask : 255 . 255 . 255 . 0
TCP PORT : (1621~5000) 1621
MAC Address : 00.13.57.00.00.68
Force Transmit time : (0~3000ms) 5
Force Transmit Bytes : (1~32) 32
Cilent Mode Remote IP Address 192 . 168 . 1 . 1
Cilent Mode Remote TCP Port 1621
Lock Remote IP Address
Setup Password : (0 ~ 8 Characters)
Serial Port Speed: 9600
TCP Idle Disconnect Time : (60 ~ 6000 sec) 60
Serial Port Hardware Handshaking (RTS/CTS)
Get
Write
Exit
Mode [V2.03 Later]
Server Mode
Cilent Mode
Connect Event
UART Received
CTS Active State
Lock Serial Port
Free Run
Freeze Over
Serial Number 13570104
...
AR-727i Version 2.05 is Ready !

Last Step: Change new address and parameters then click “write”.

Setting	Value	Notes	Necessity
Local IP Address	192.168.001.127	Defines own IP Address of the AR-727CM	Required
Local Gateway IP Address	192.168.001.254	Defines the IP Address of the default gateway	Required
Local Subnet Mask	255.255.255.000	Defines the IP Address range for the local network segment	Required
TCP Port	1621	The TCP port that other devices must use to contact this device. To avoid conflicts with standard TCP ports.	Required
MAC Address	00.E0.4C.00.00.50	The MAC (Media Access Control) address is a unique identifier set at the factory.	-
Force Transmit time	5	Forces AR-727CM device's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.	Optional
Force Transmit Bytes	32	Defines the amount of data in the serial, Ethernet buffer at which the break condition will be generated and the contents of buffer will be sent out via the Ethernet port.	Optional
Lock Remote IP Address	-	Allows contact with only the specified remote IP address.	Optional
Lock Serial Port (Free Run or Freeze Over)	-	To avoid the hacker use this IP to intercept data when Remote IP Address doesn't receive data.	Optional
Setup Password	none	Console password	Optional
Serial Port Speed	9600	Changes current baud rate of the AR-727CM's serial port (from 2400bps to 57600bps).	Required
TCP Auto Disconnect Time (Second)	60	This device automatically closes TCP connection if there is no TCP activity for the given time.	Optional
Serial Port Hardware Handshaking (RTS/CTS)	-	An exchange of signal over specific wires which each device indicates its readiness to send or receive data.	Optional
DHCP	-	Selecting the enable option allows DHCP to automatically assign the AR-727CM's IP address.	Optional

How to know PC's IP Address? (Win98)

Start → execute → enter "winipcfg".

How to know PC's IP Address? (Win2000)

Start → Programs → Accessories → Command Prompt → C:\> ipconfig